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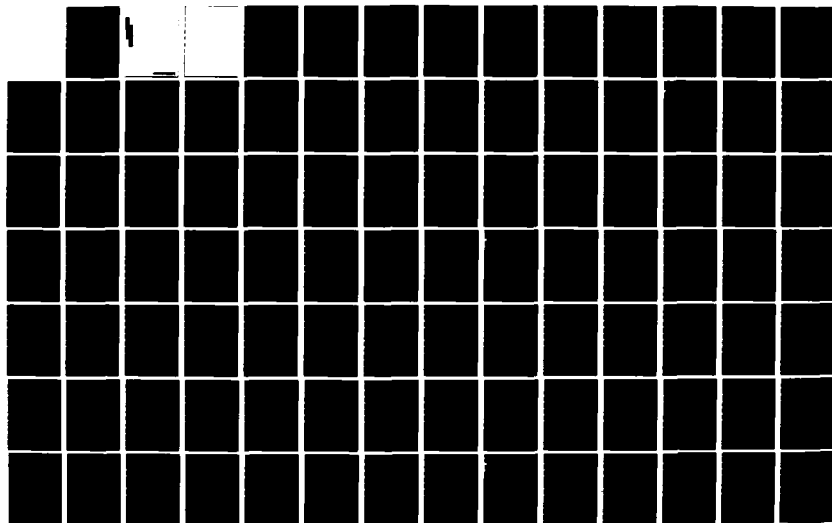
MOBILITY AND TRANSPORTATION ANALYSIS IN SUPPORT OF THE
LIGHT ATTACK BATTAL (U) ARMY MATERIEL SYSTEMS ANALYSIS
ACTIVITY ABERDEEN PROVING GROU. C R DIETZ ET AL.
MAY 83 AMSAA-TR-374-VOL-2

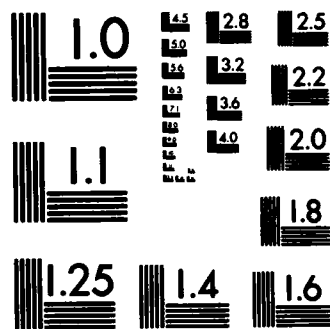
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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A mobility analysis of the 12 vehicles which are used in the light attack battalion (LAB) was made in support of a study being conducted by the US Army Infantry School. The Army Mobility Model was used to exercise the vehicles in Mid-East and European scenarios which included operation on primary and secondary roads as well as on trails and cross country. Runs were made on dry, wet and snow covered surfaces to obtain data on maximum attainable speeds under each condition. Additional analyses were conducted to determine probability of being hit while crossing typical gaps and to examine logistic requirements of moving the LAB from point to point.		

ACKNOWLEDGEMENT

The US Army Material Systems Analysis Activity (AMSAA) recognizes the following individual for contributing to this report:

PEER REVIEWER: Mr. David Jenkins

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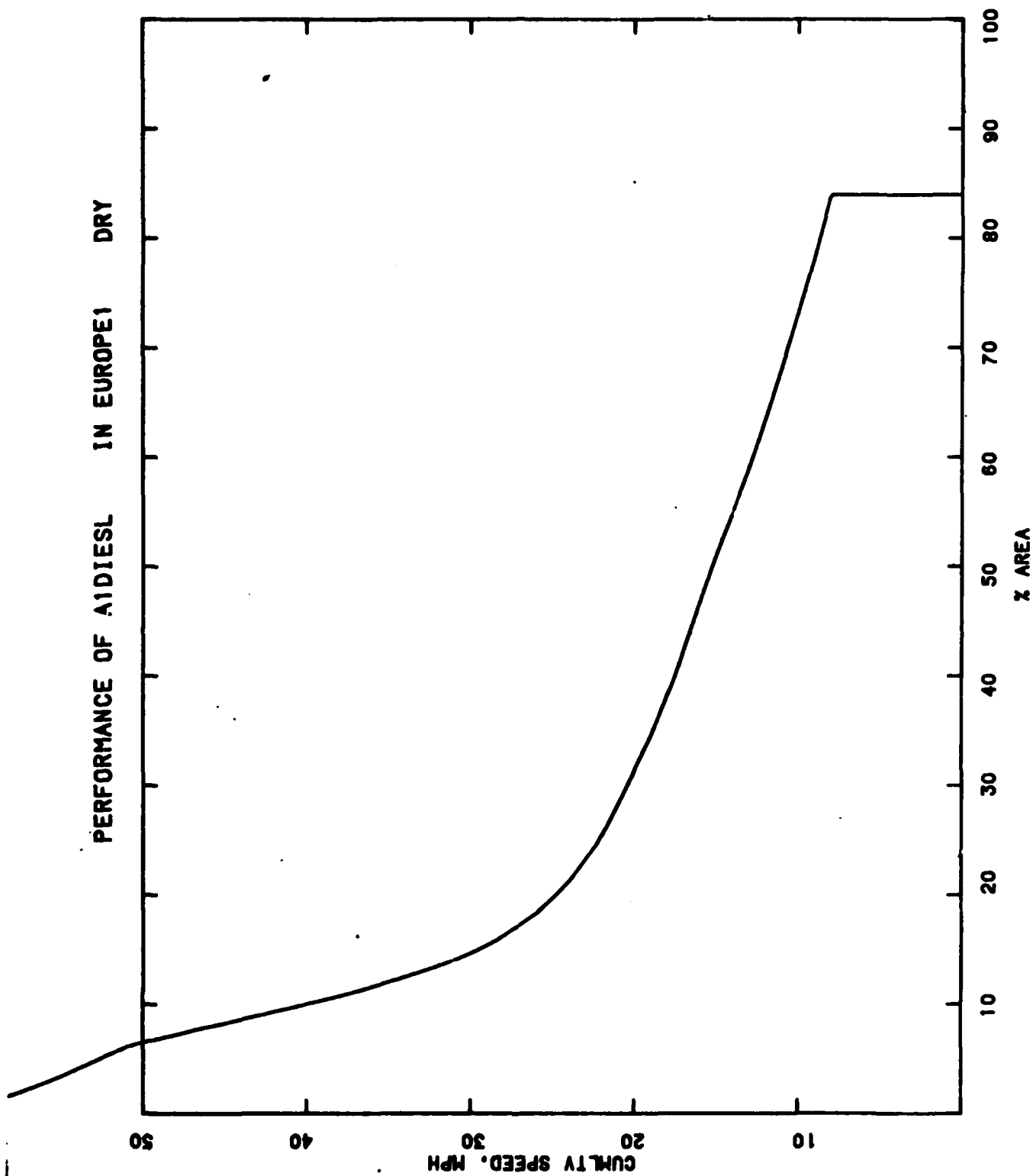
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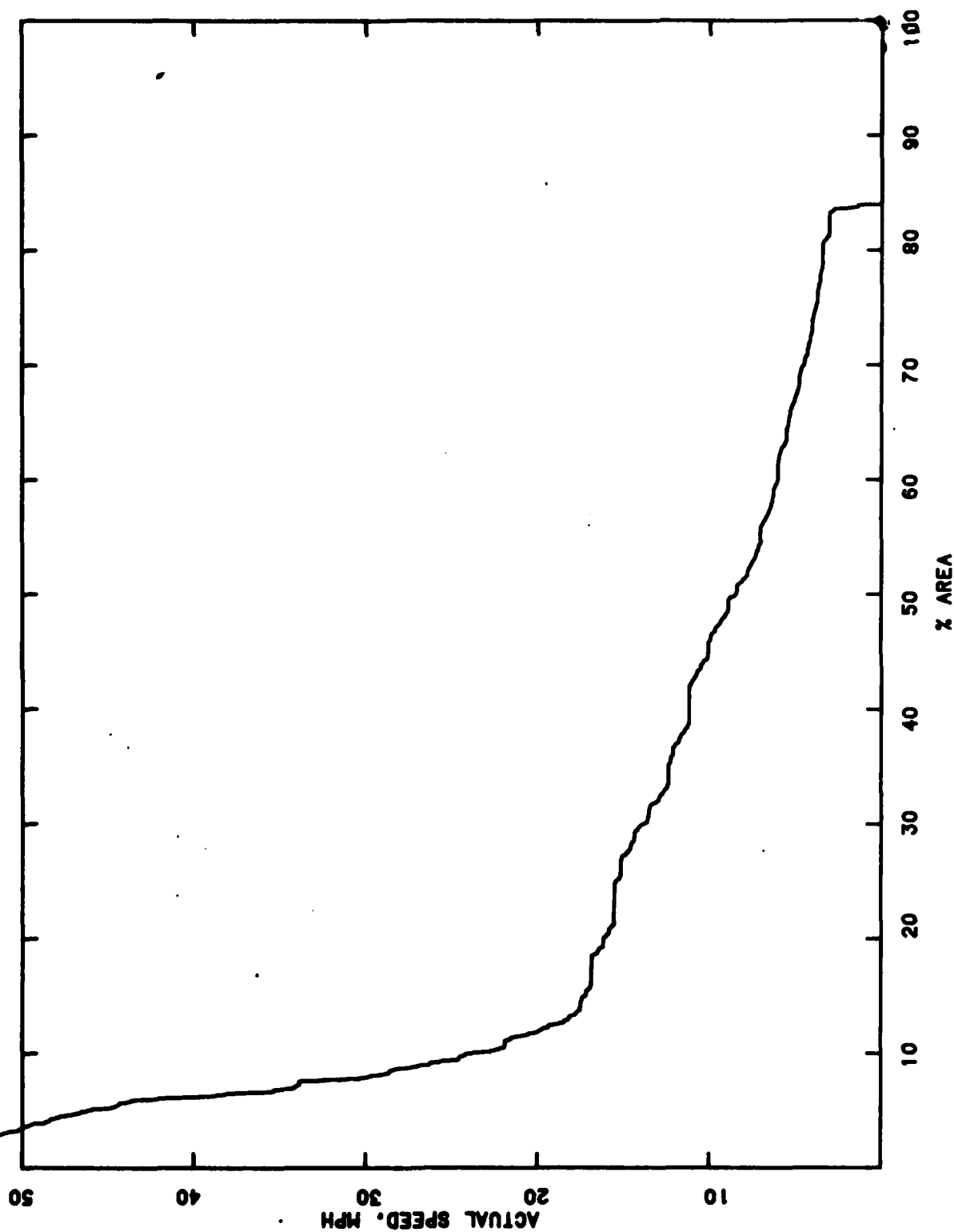
1. INTRODUCTION.

This volume contains the speed profiles, acceleration profiles and the no-go and speed limiting factors that were generated during the LAB study. Because of the large amount of material involved, it was decided to present the above items as a separate volume for ease of handling. However, these data form an integral part of the LAB study and present very detailed information that could not be conveniently included in the main body of the report.

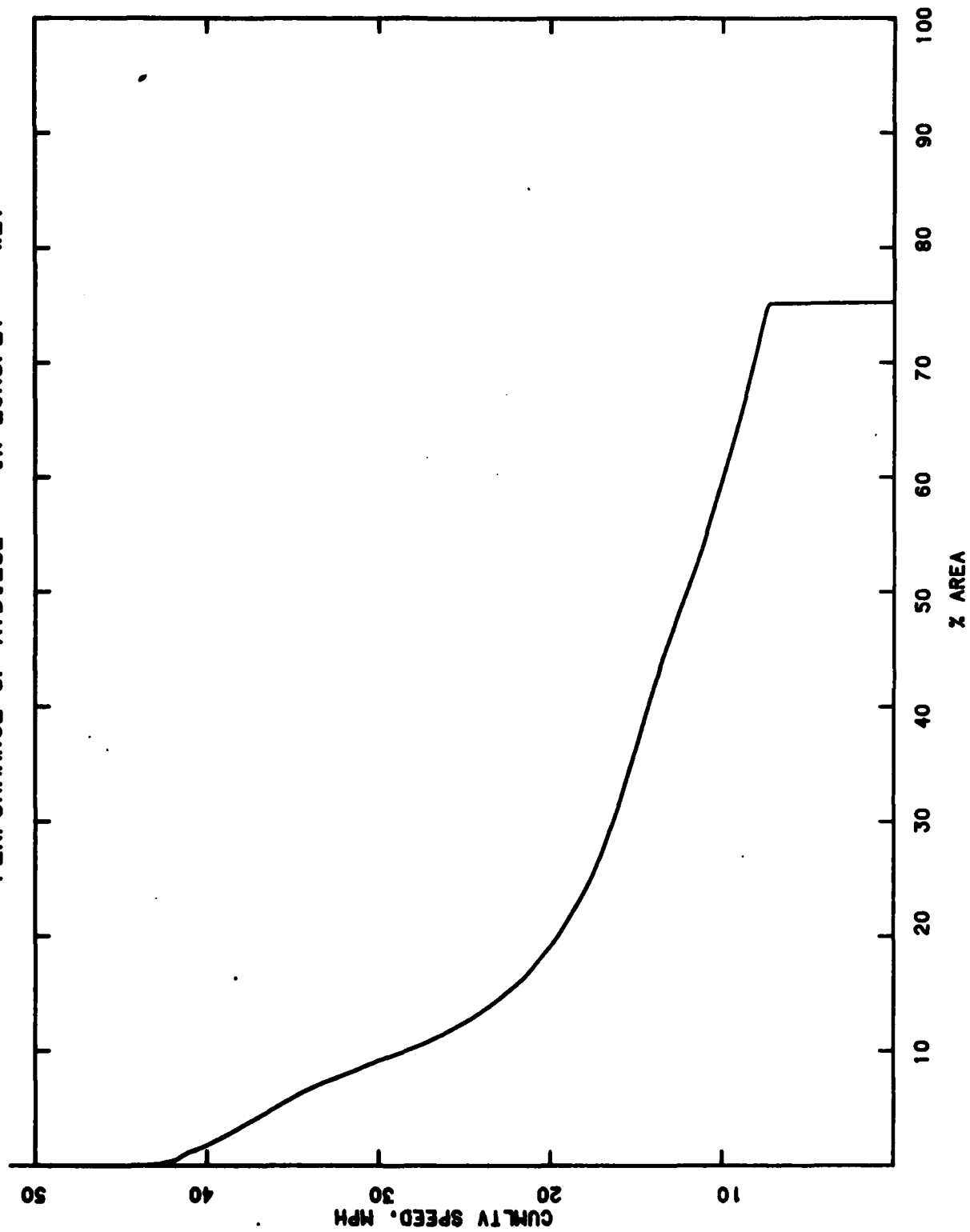
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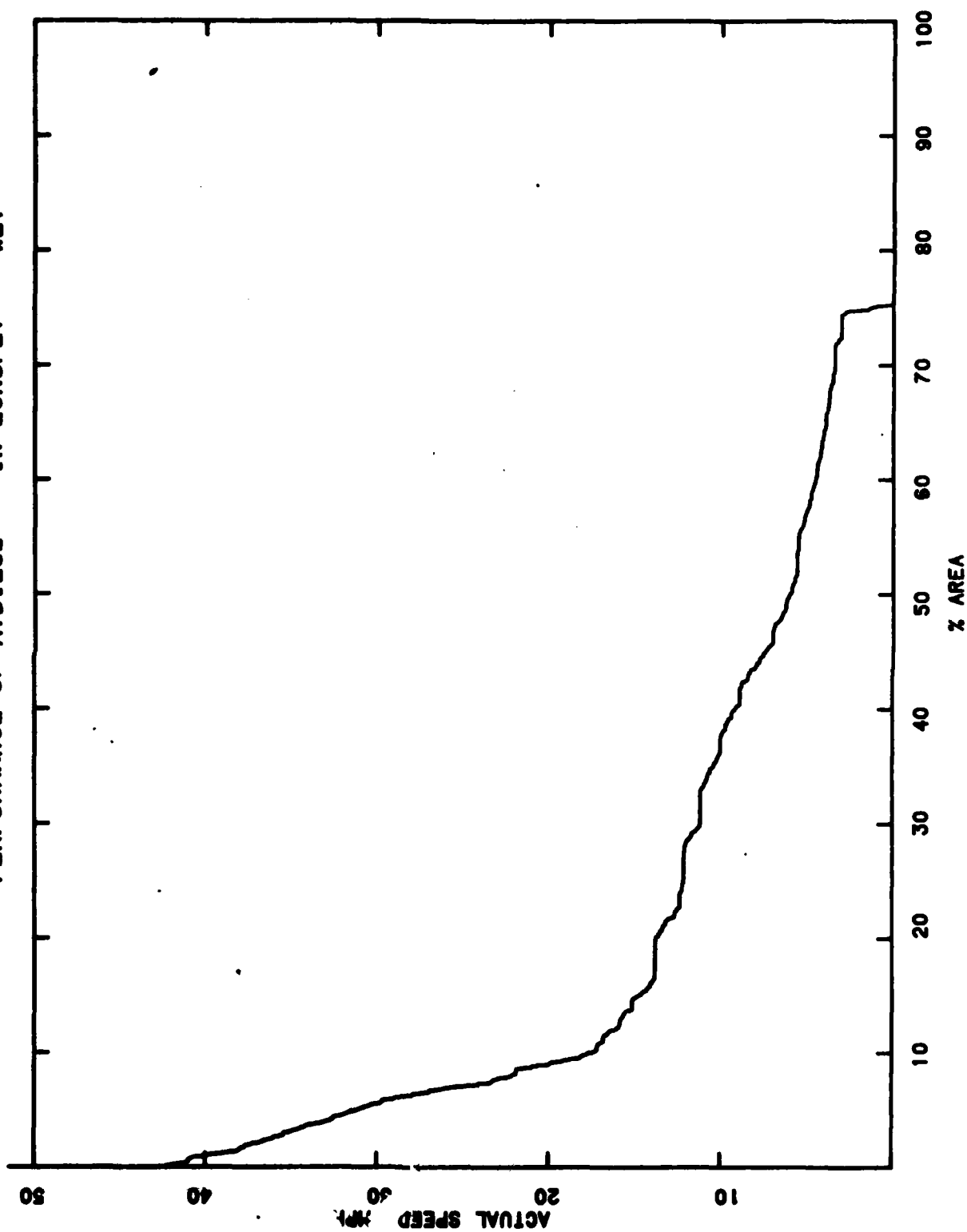
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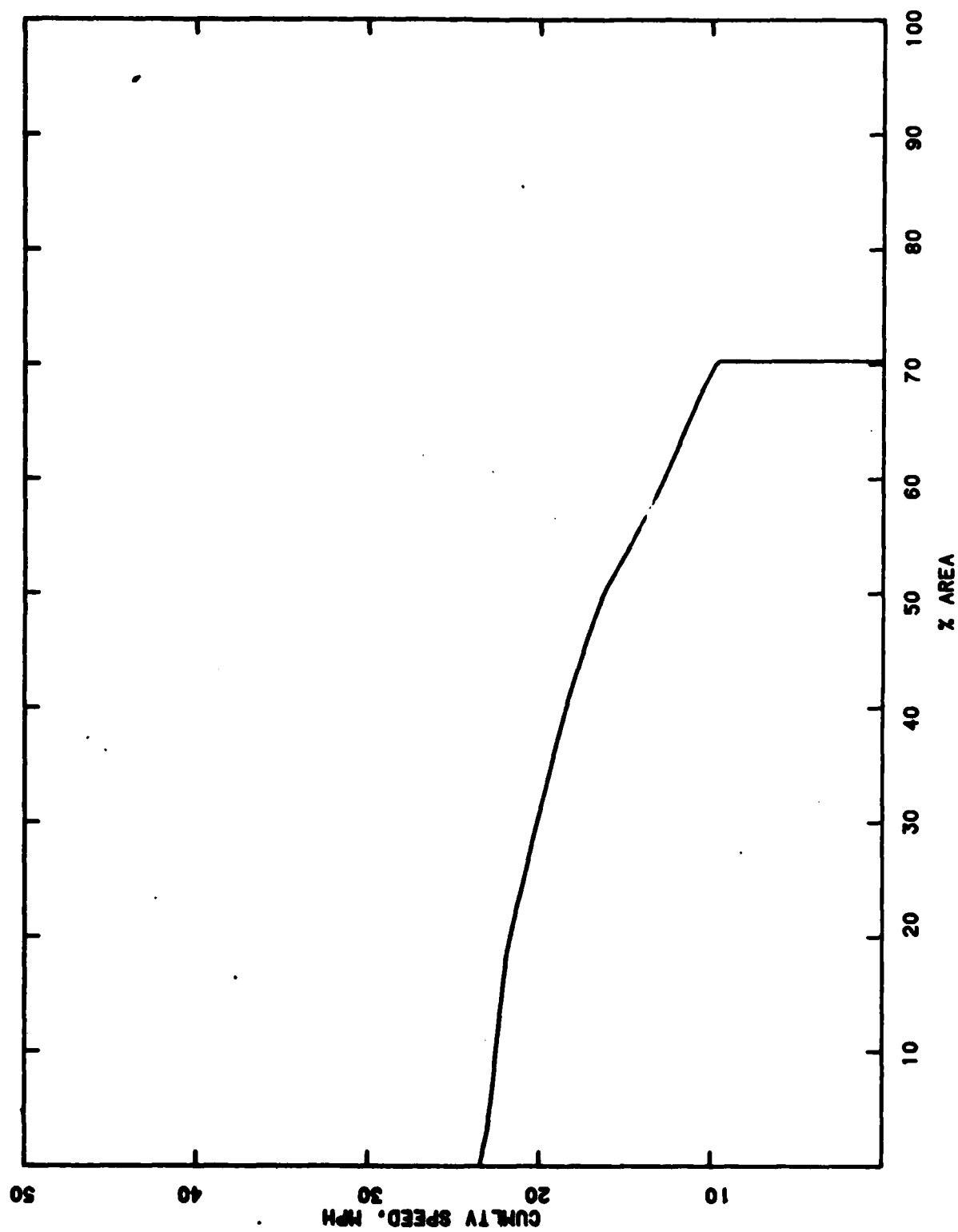
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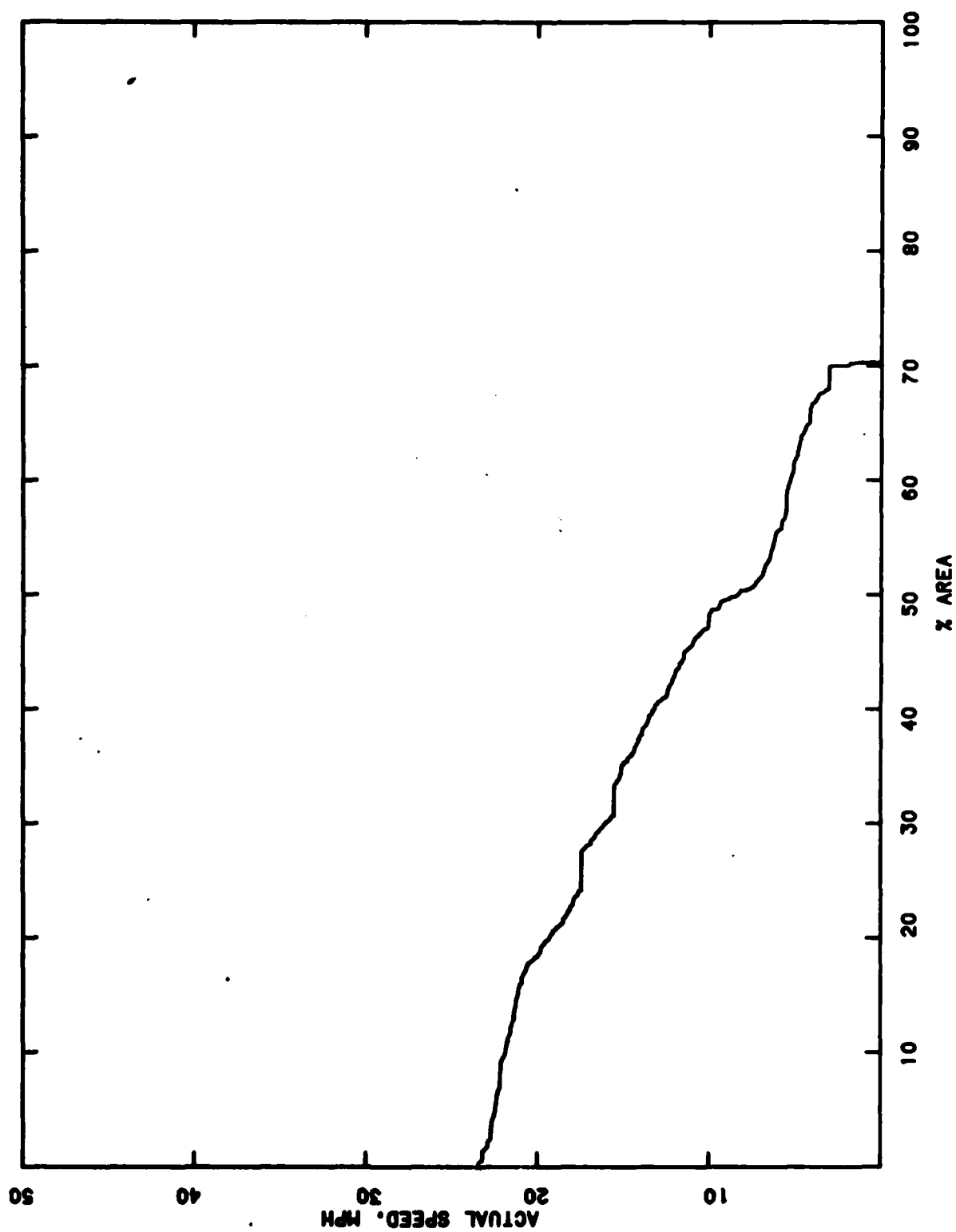
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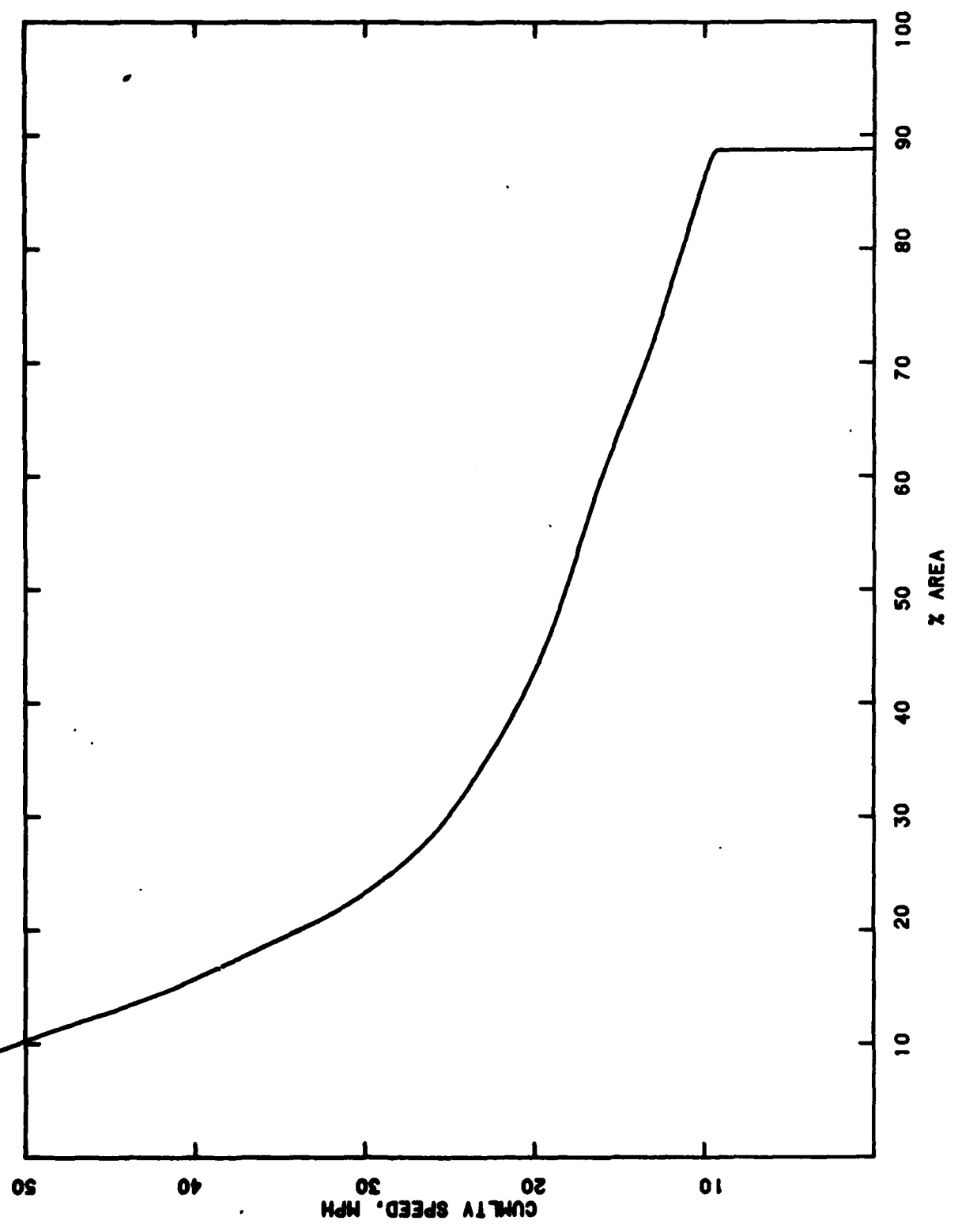
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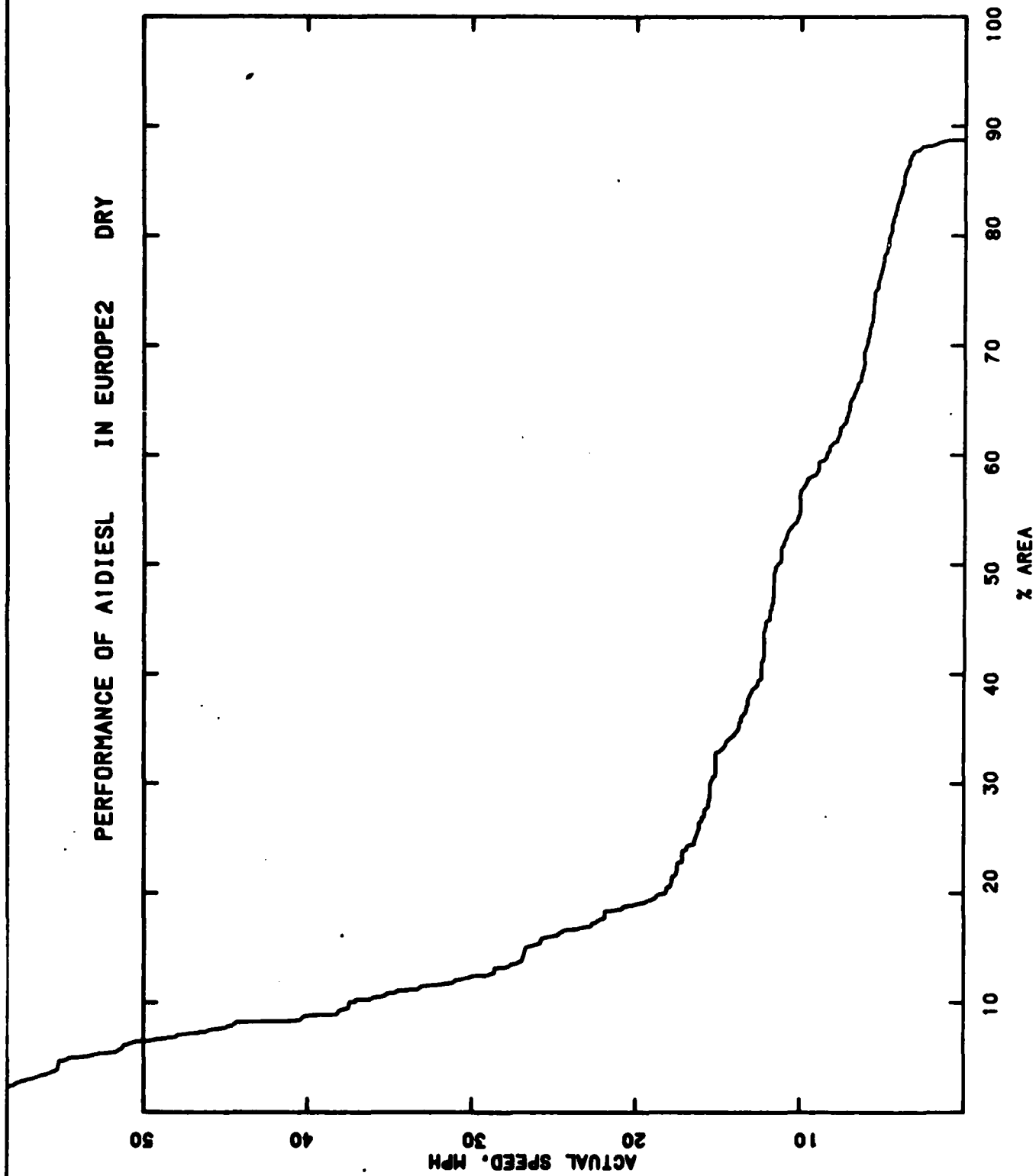
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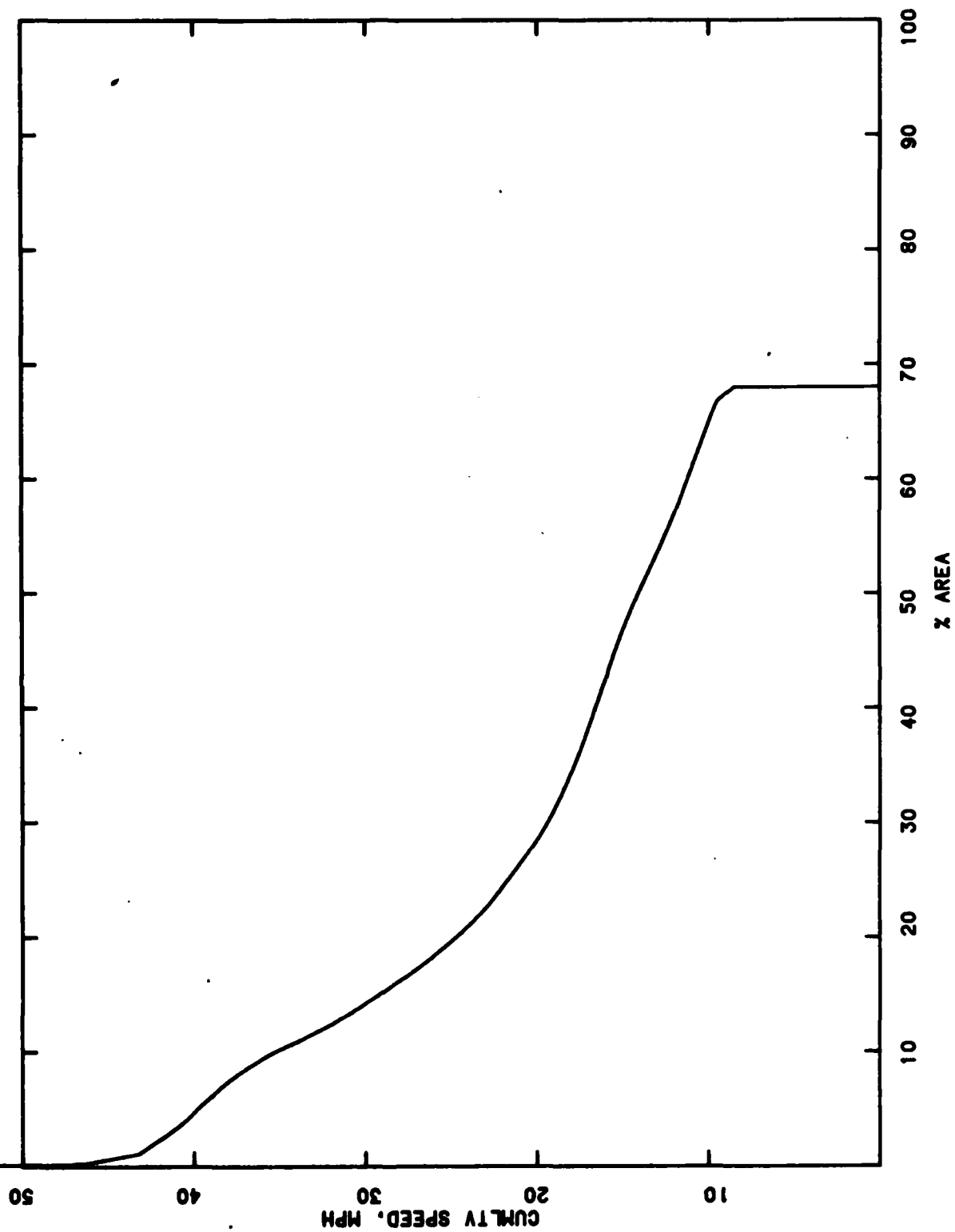
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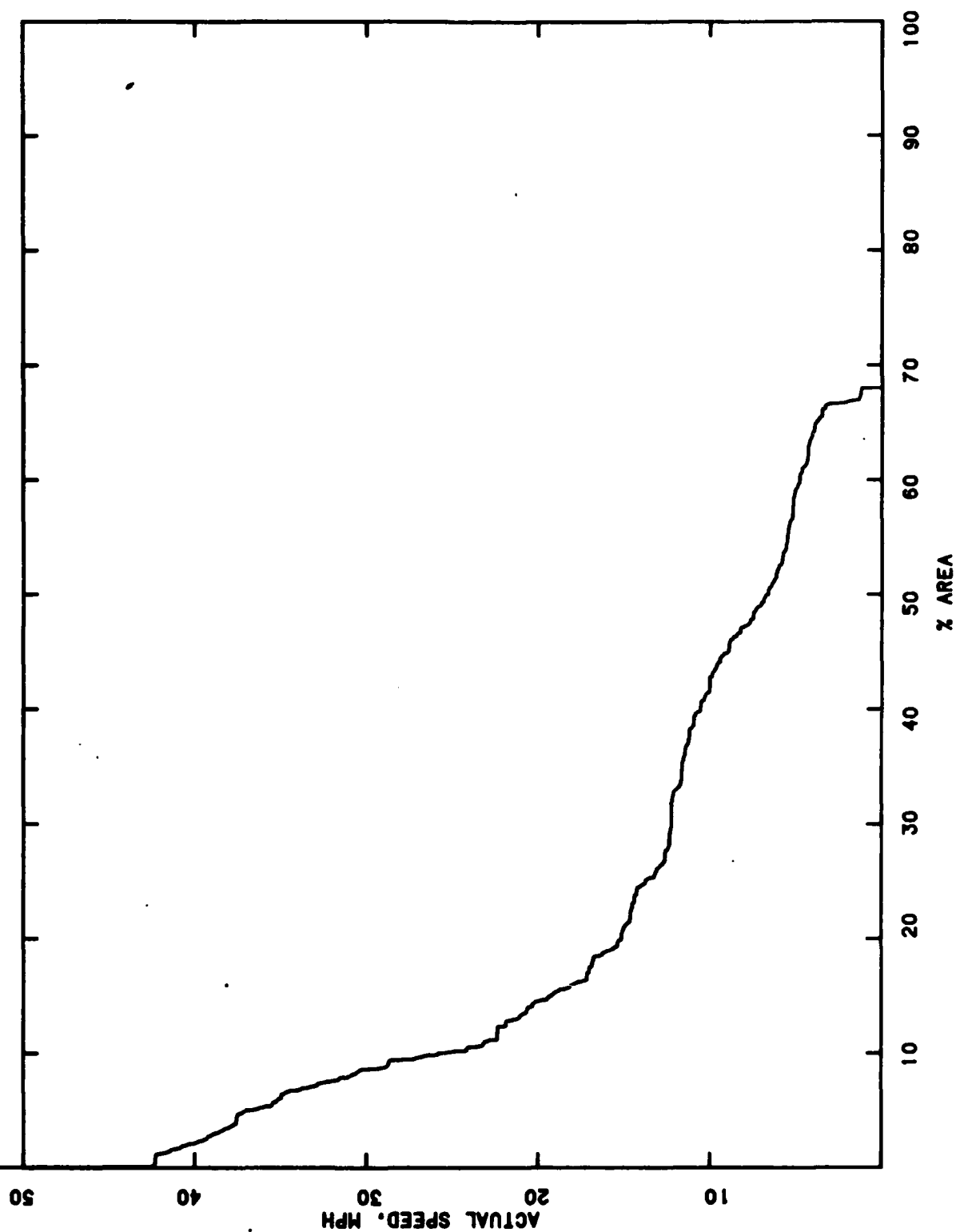
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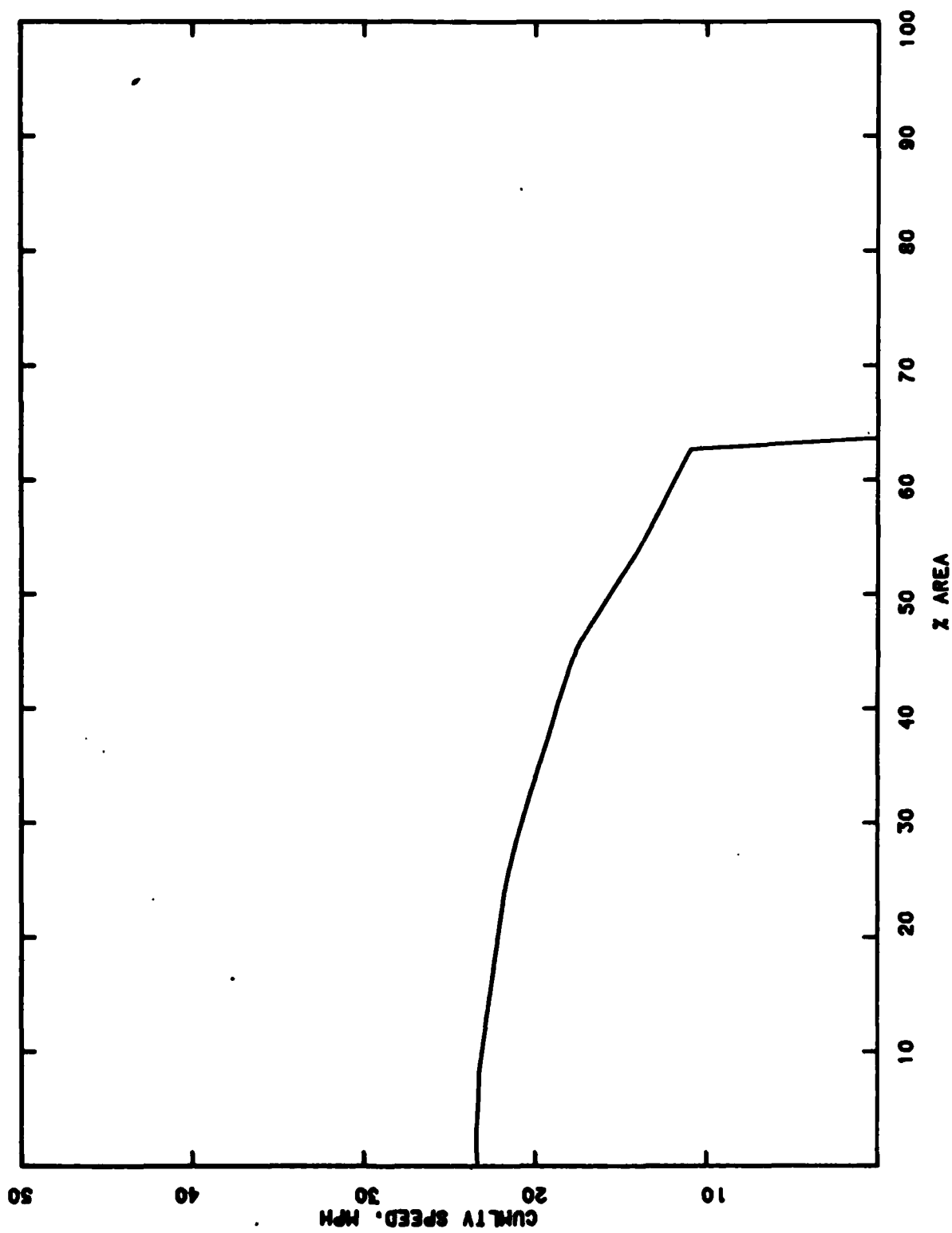
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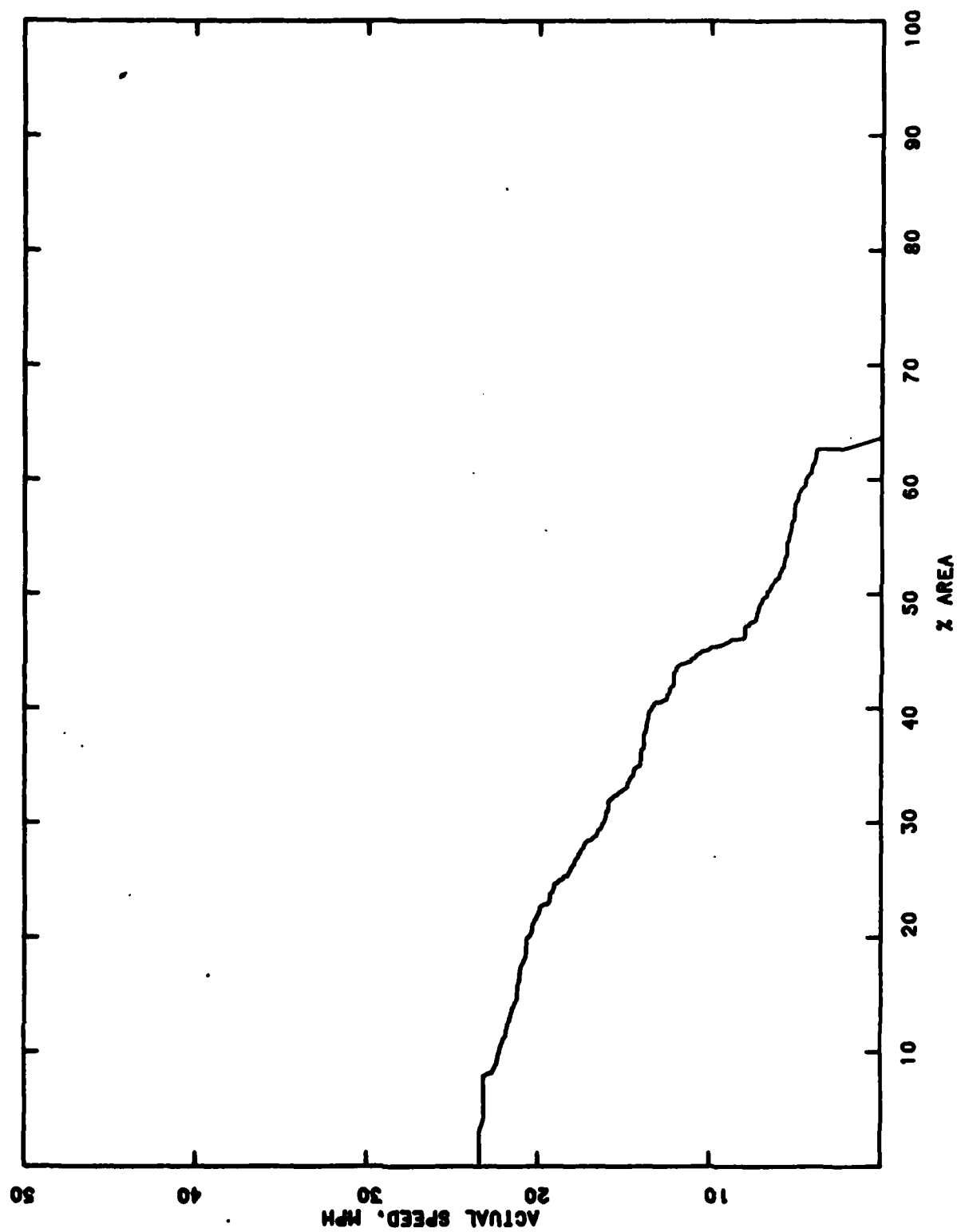
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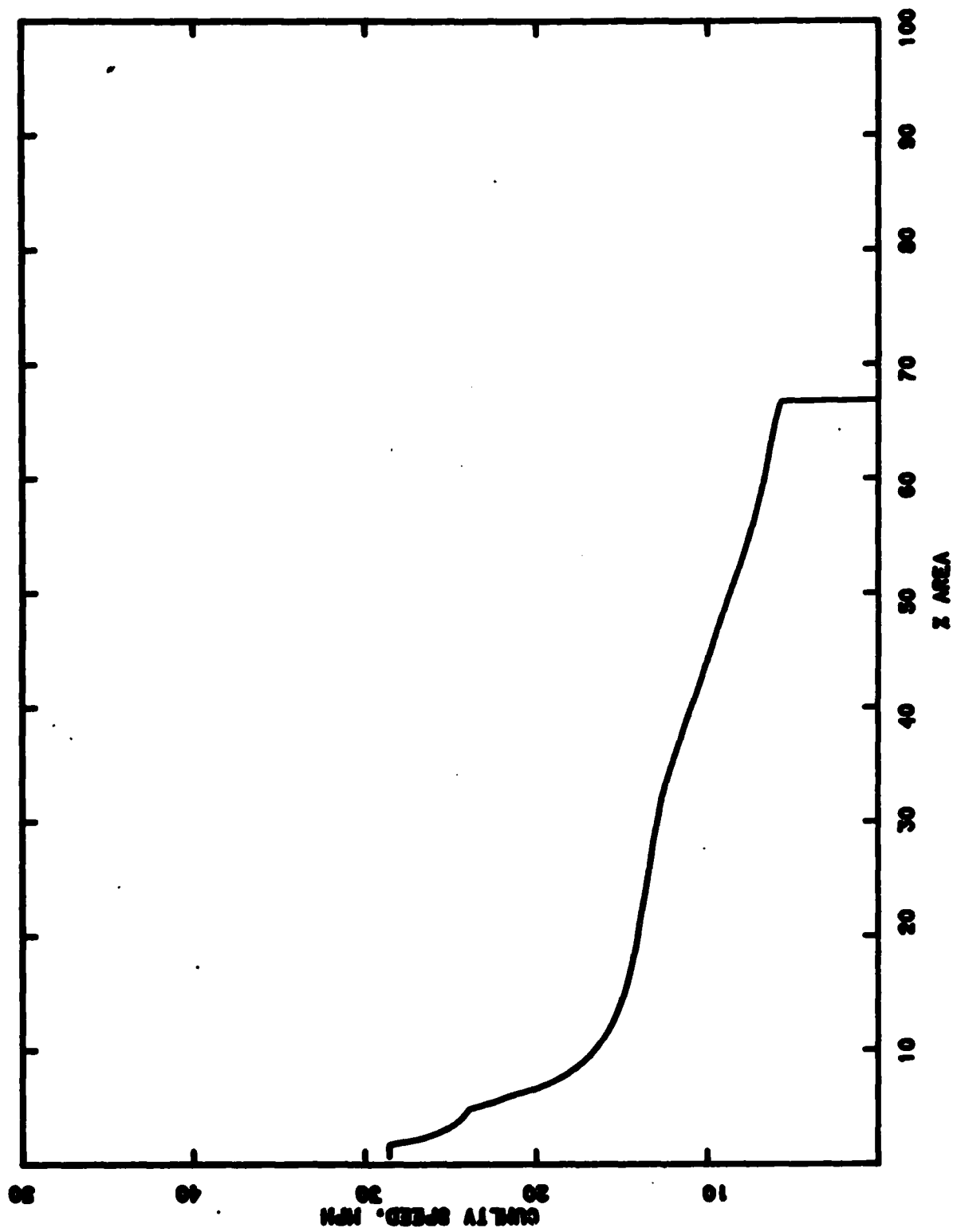
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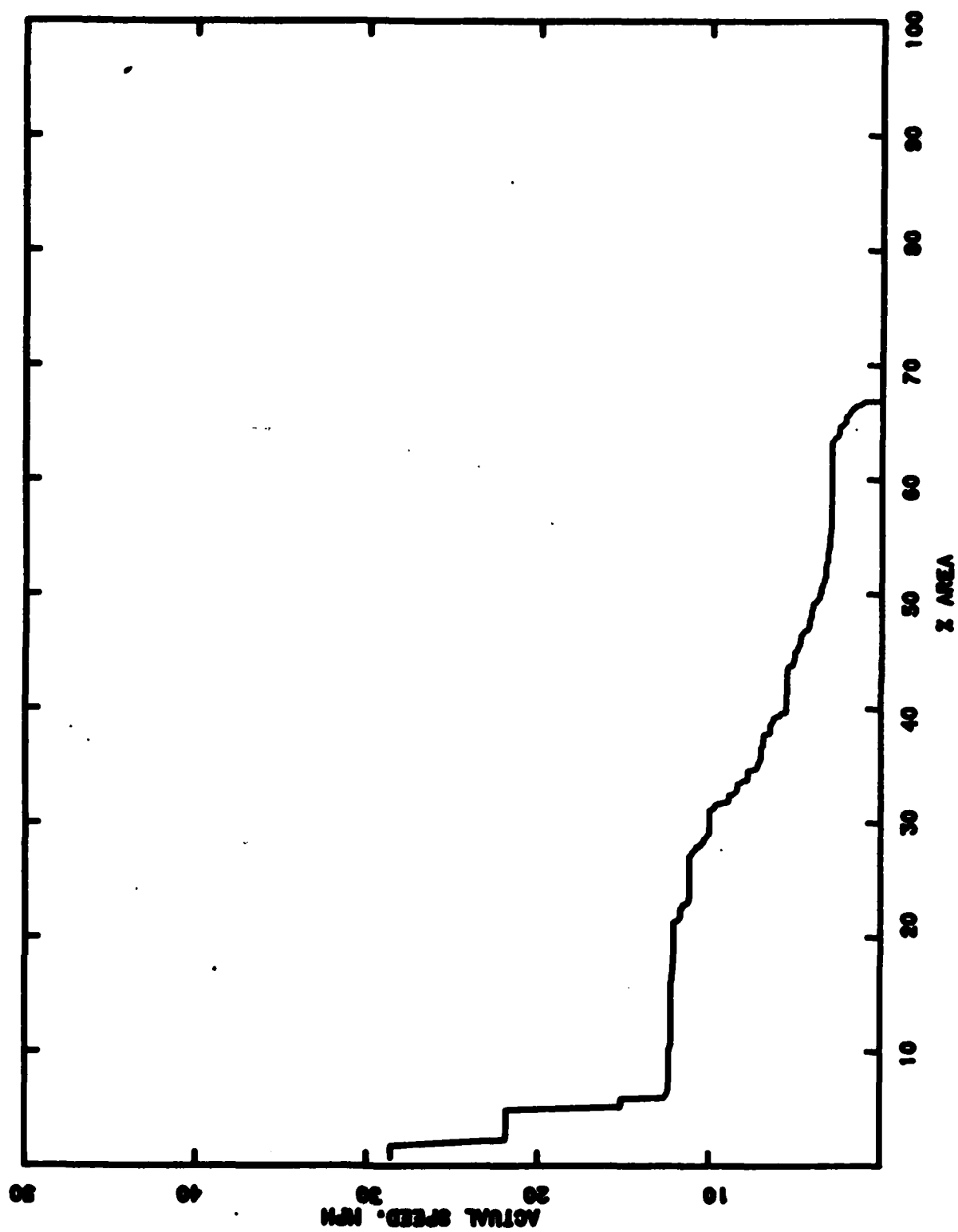
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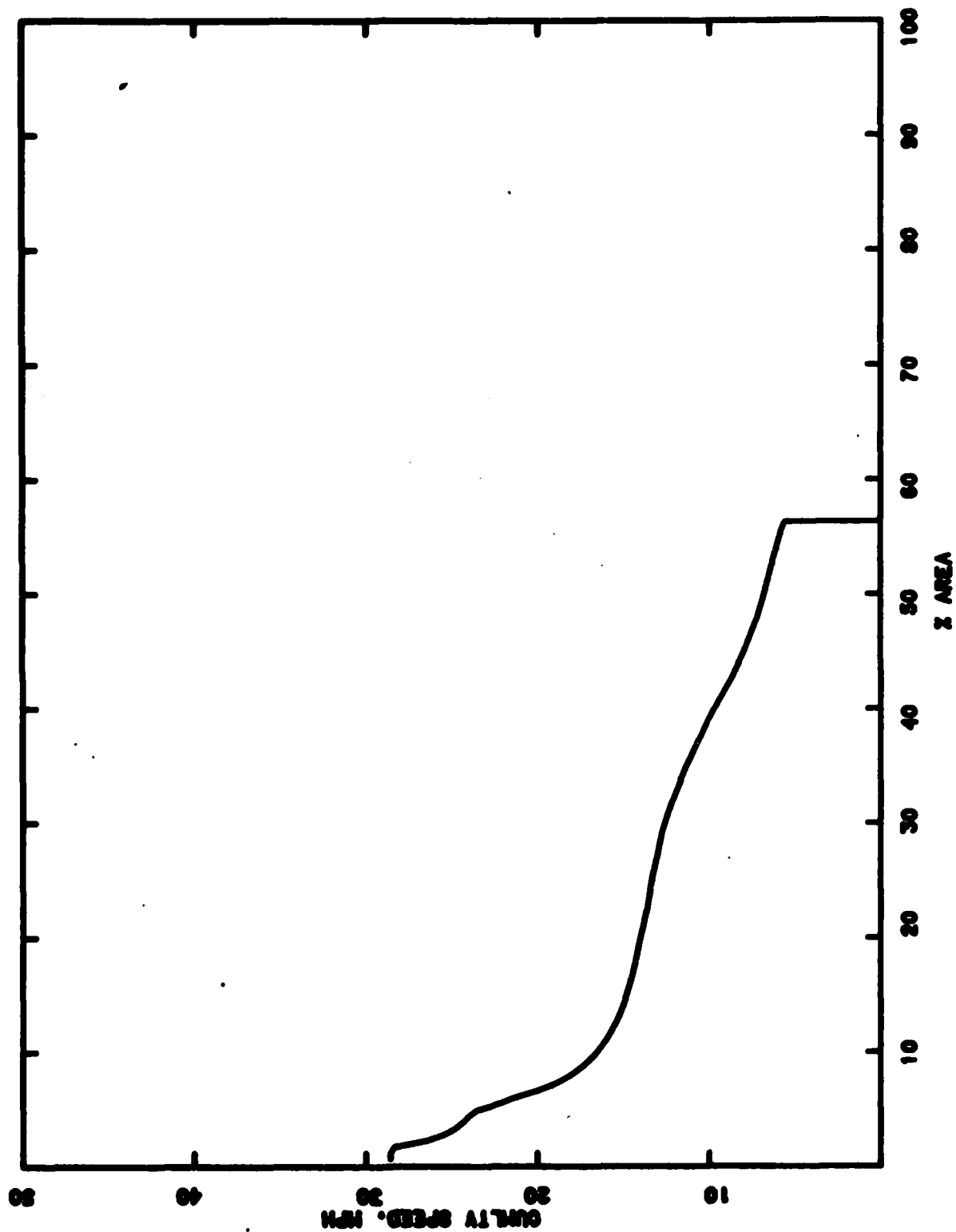
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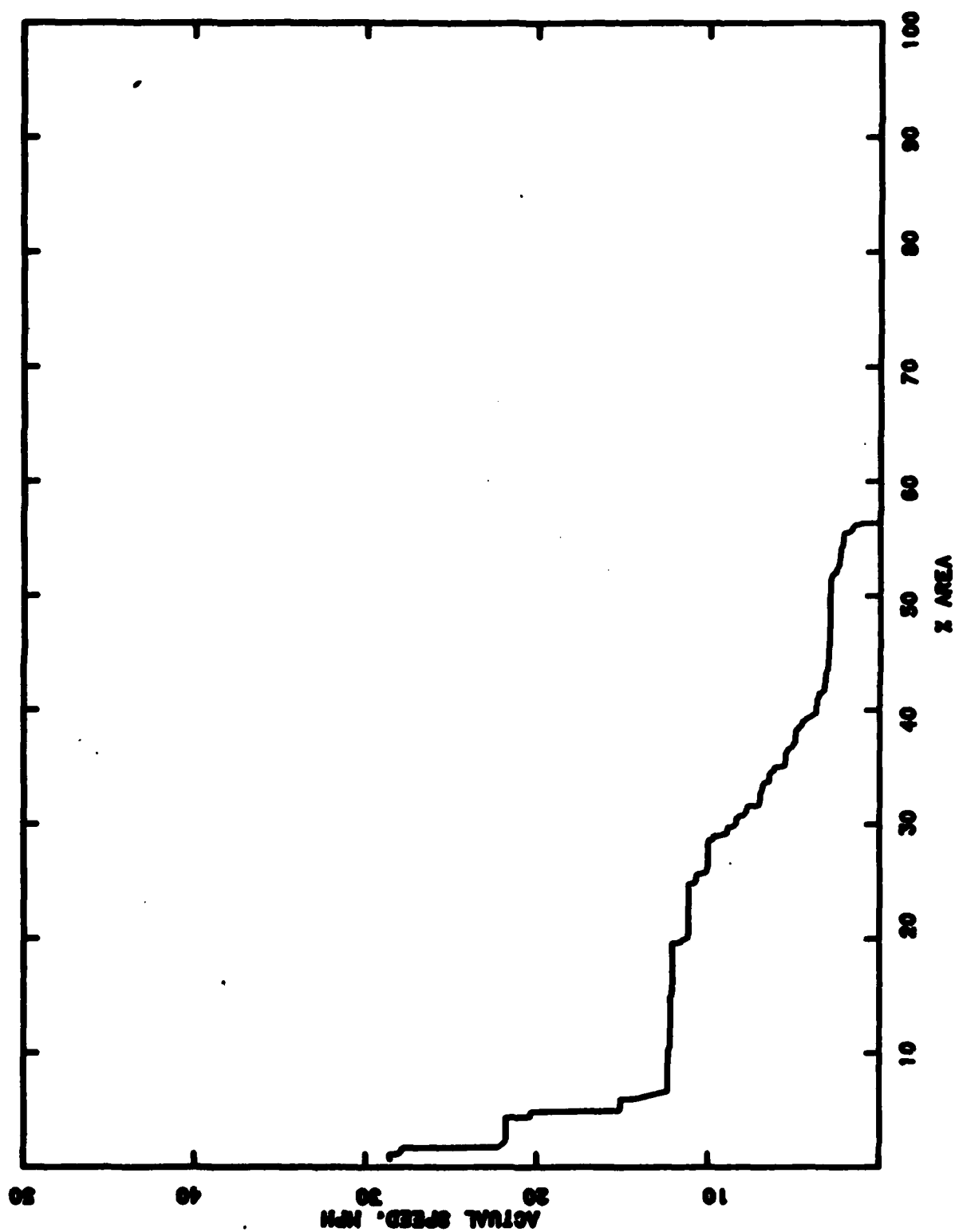
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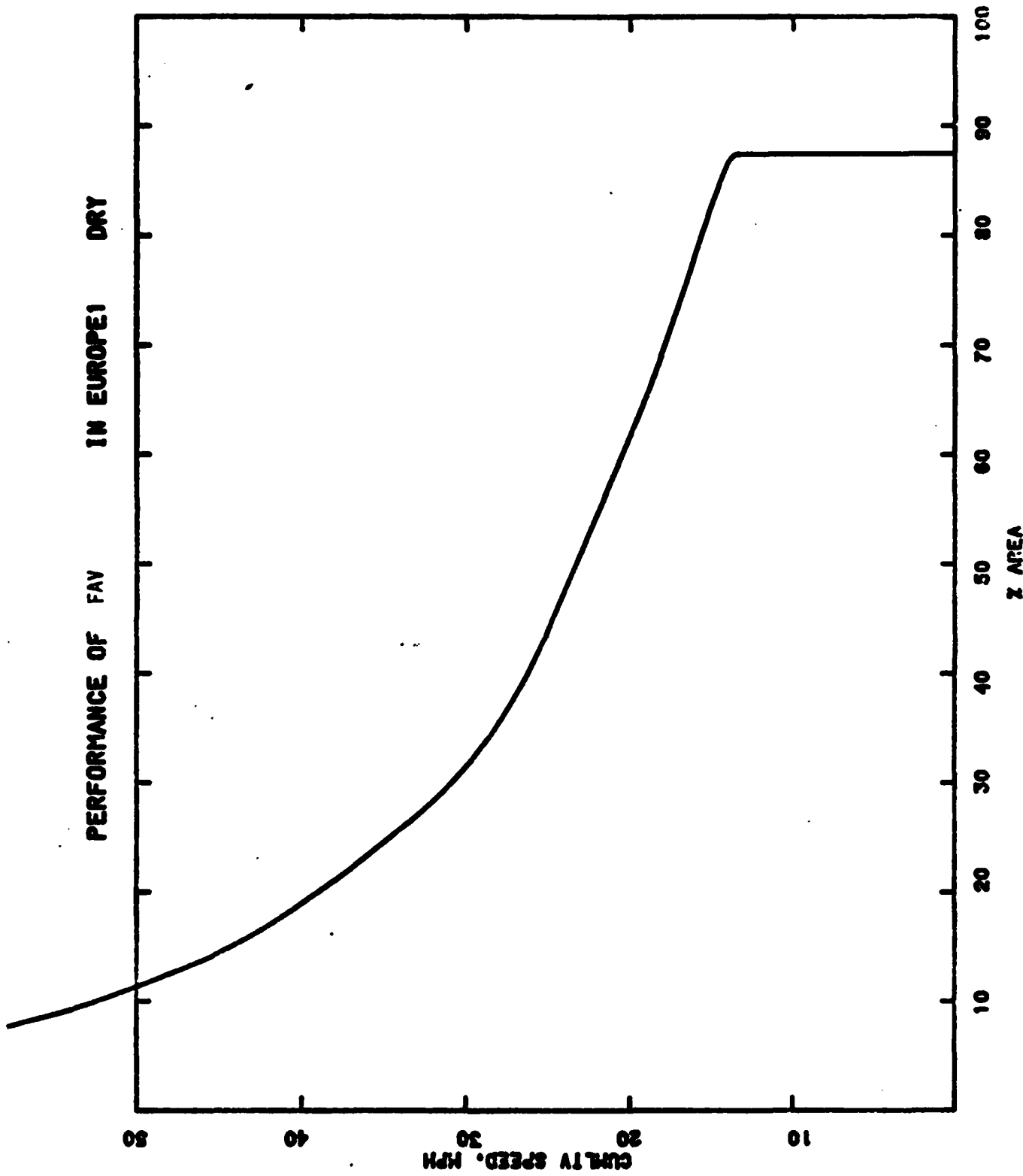


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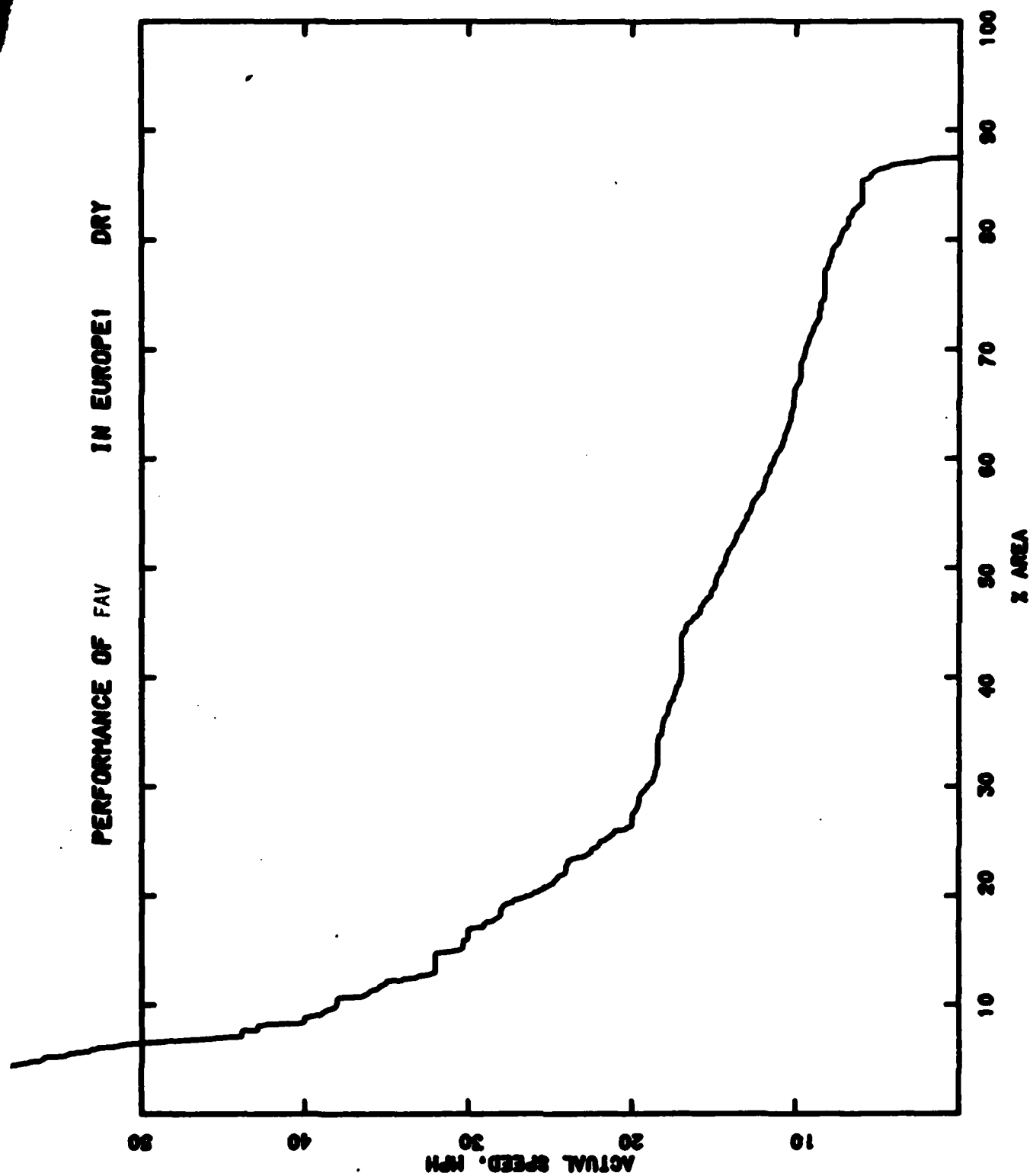


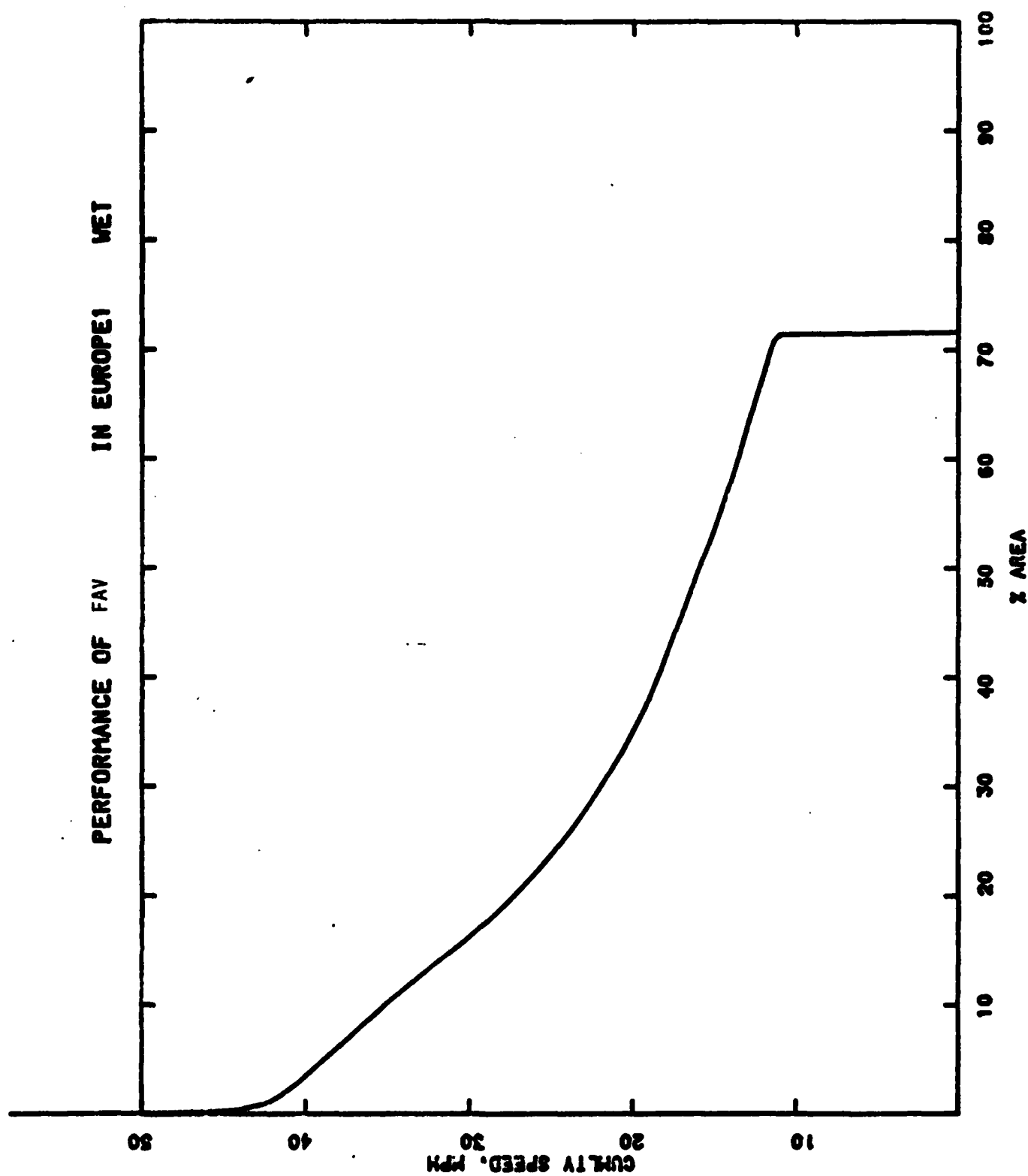
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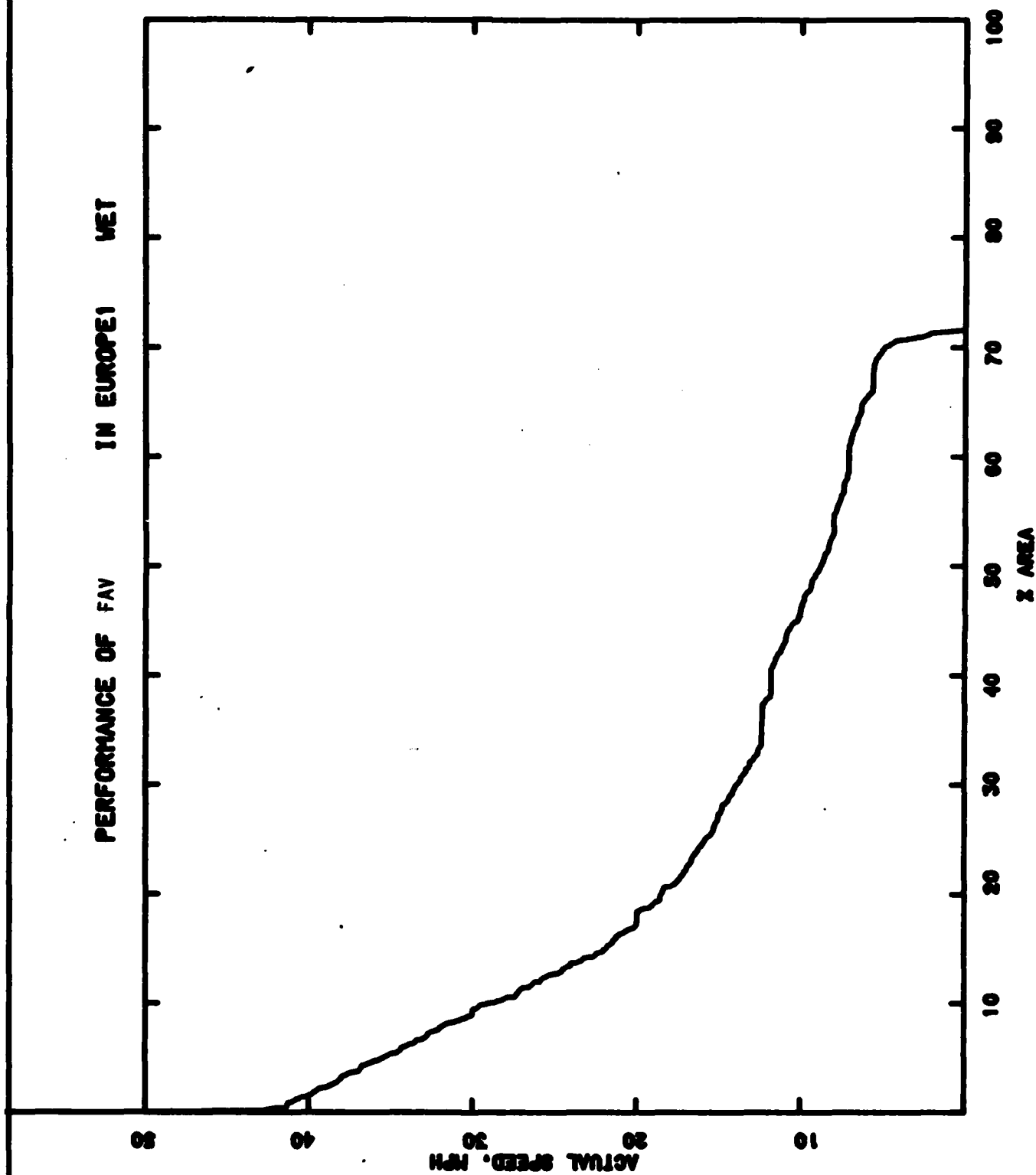




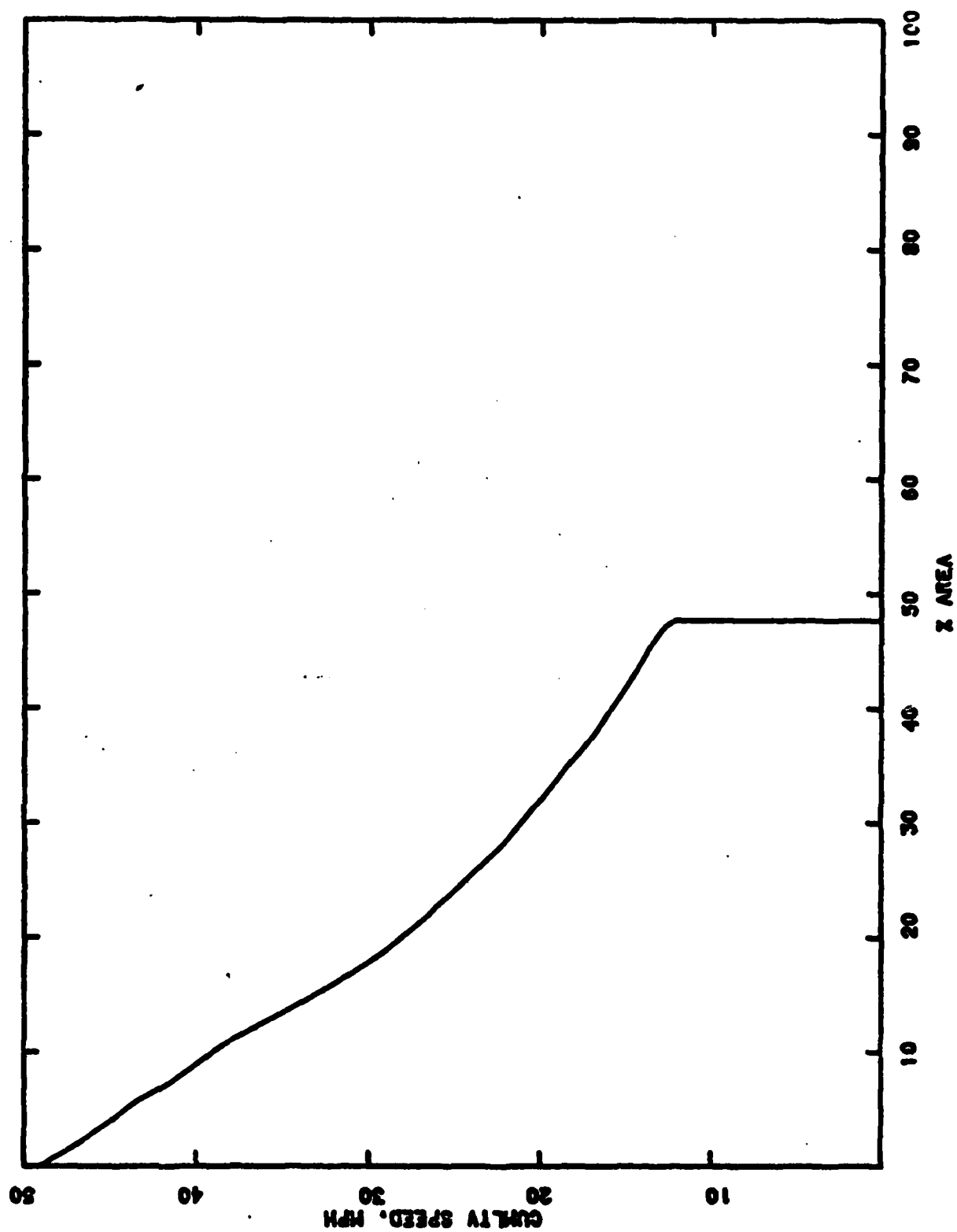
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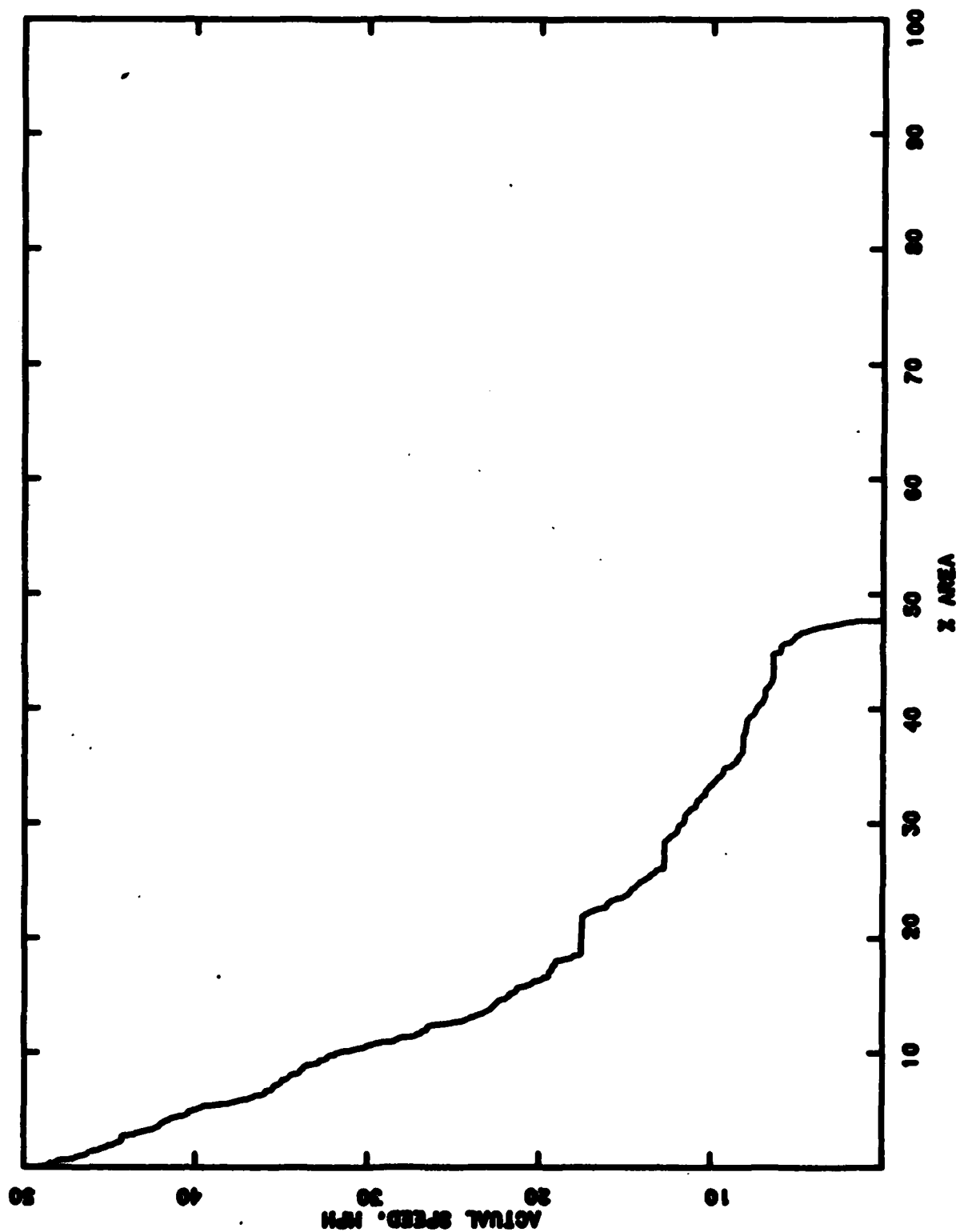


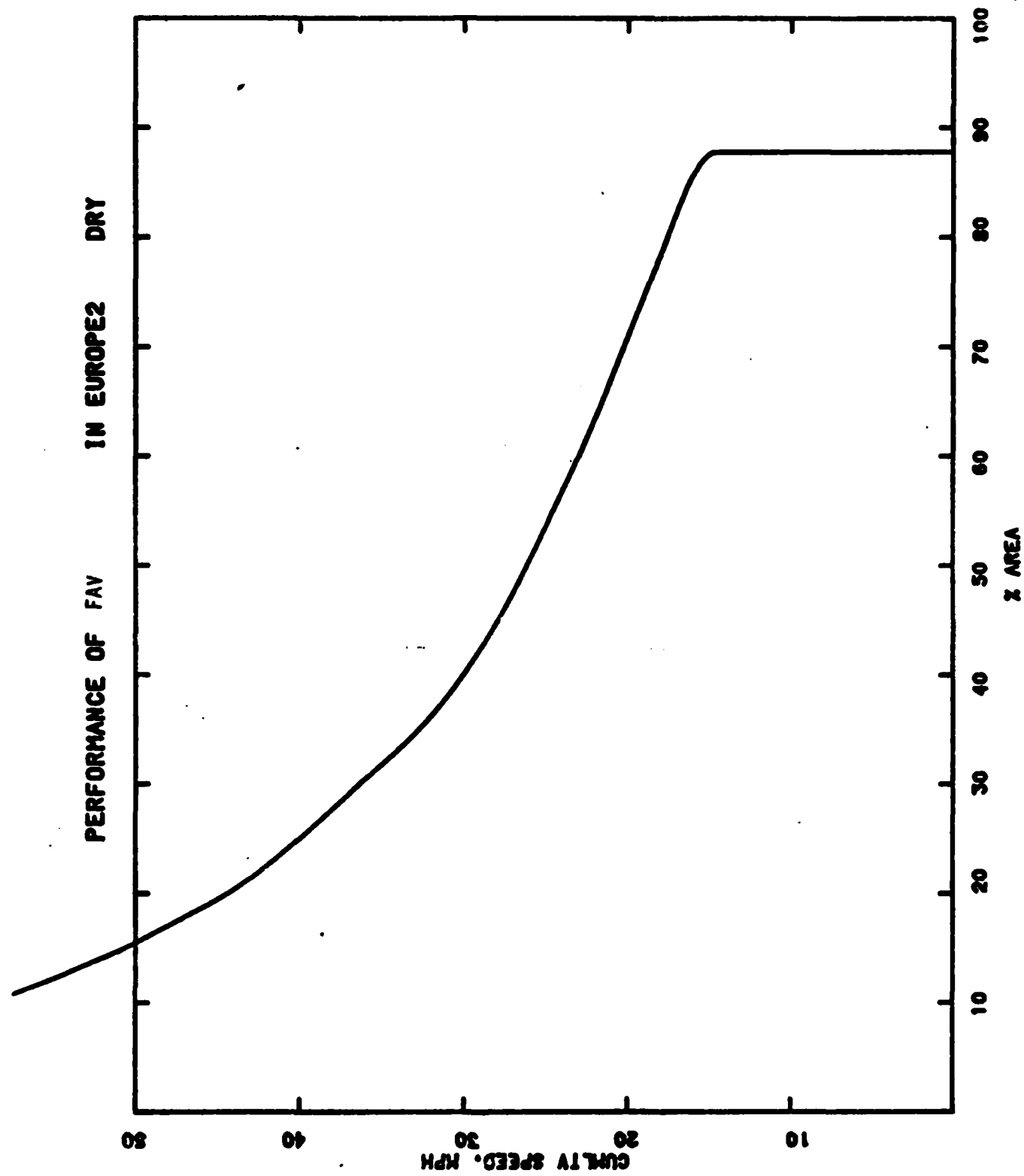


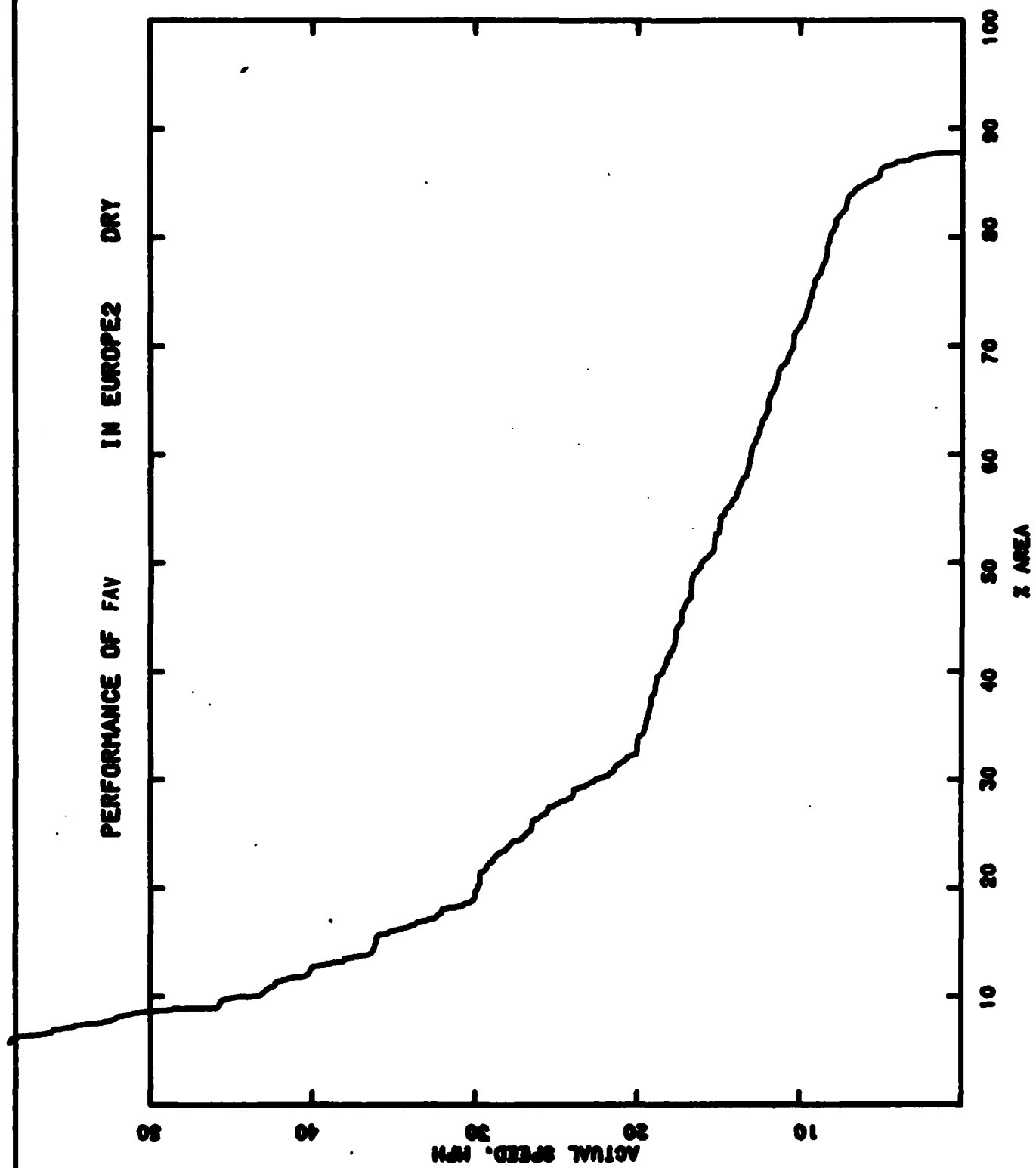
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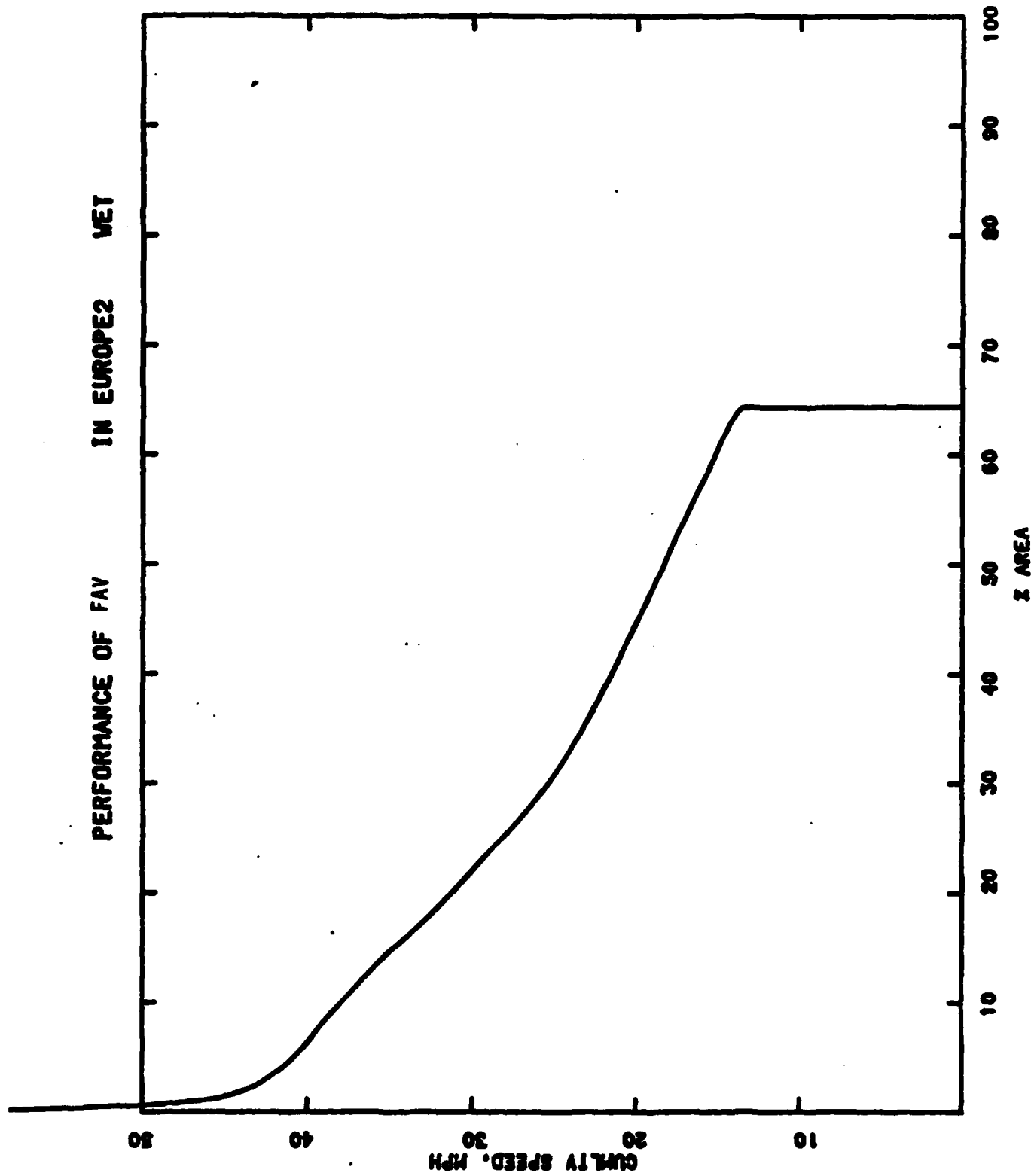


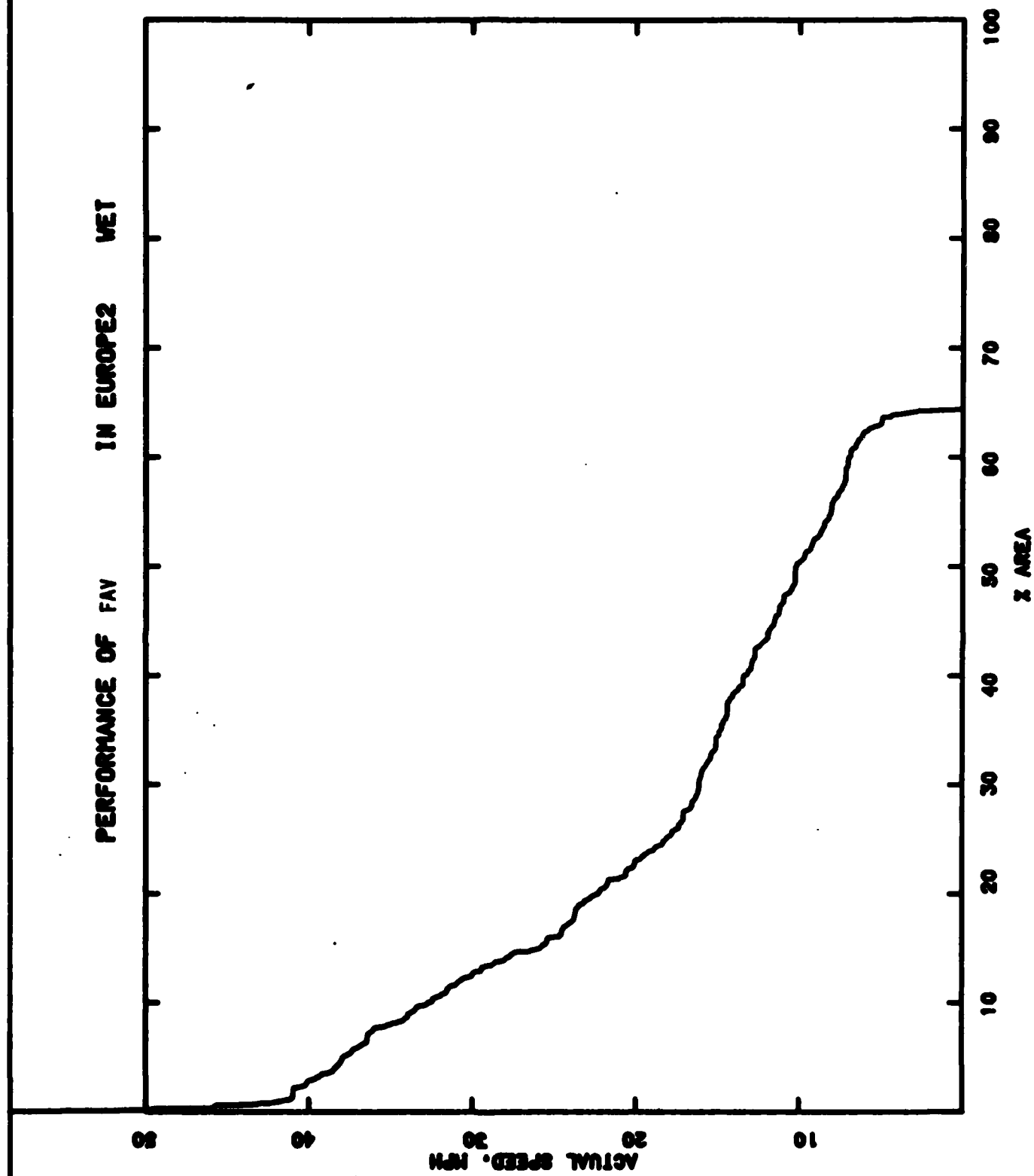
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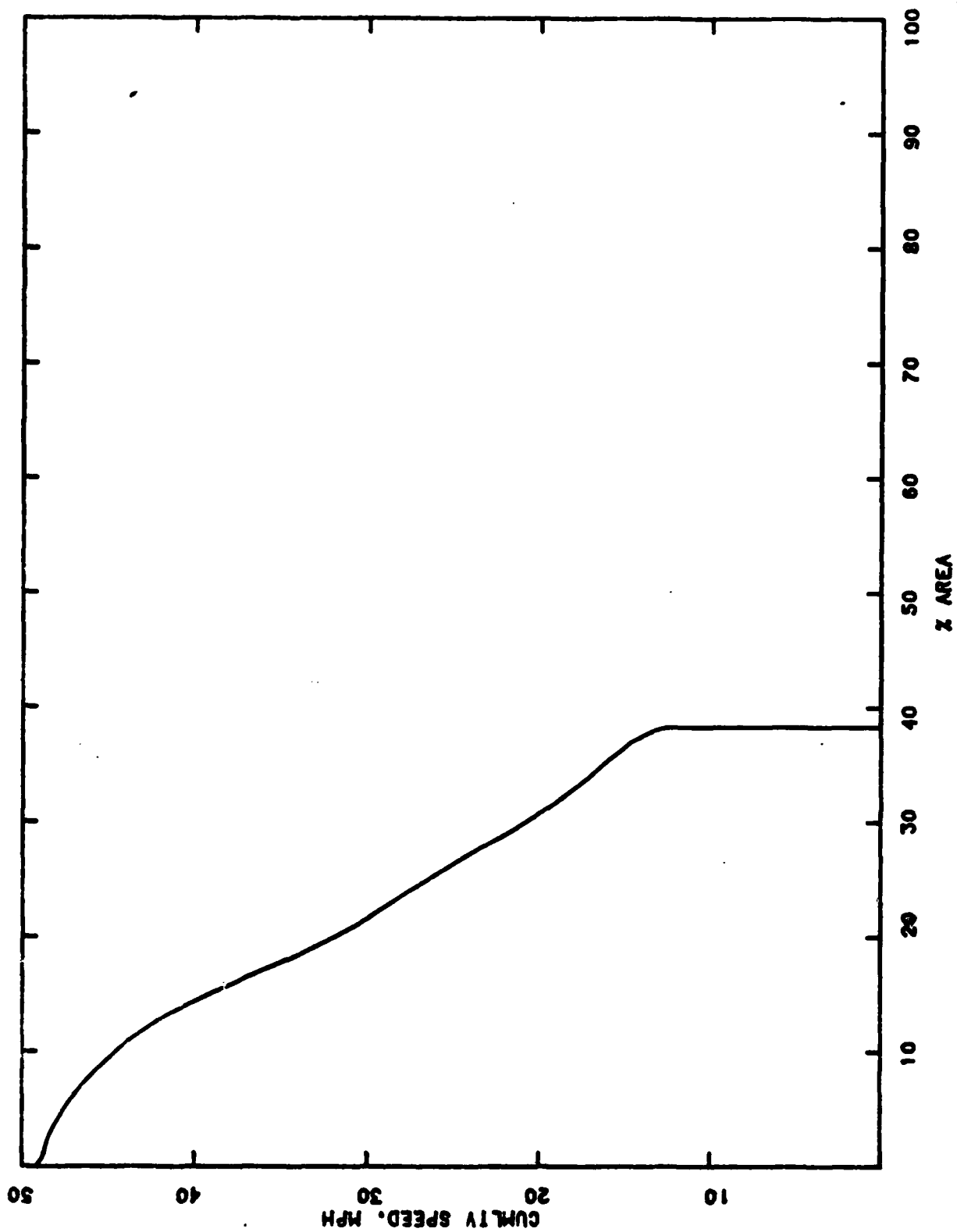




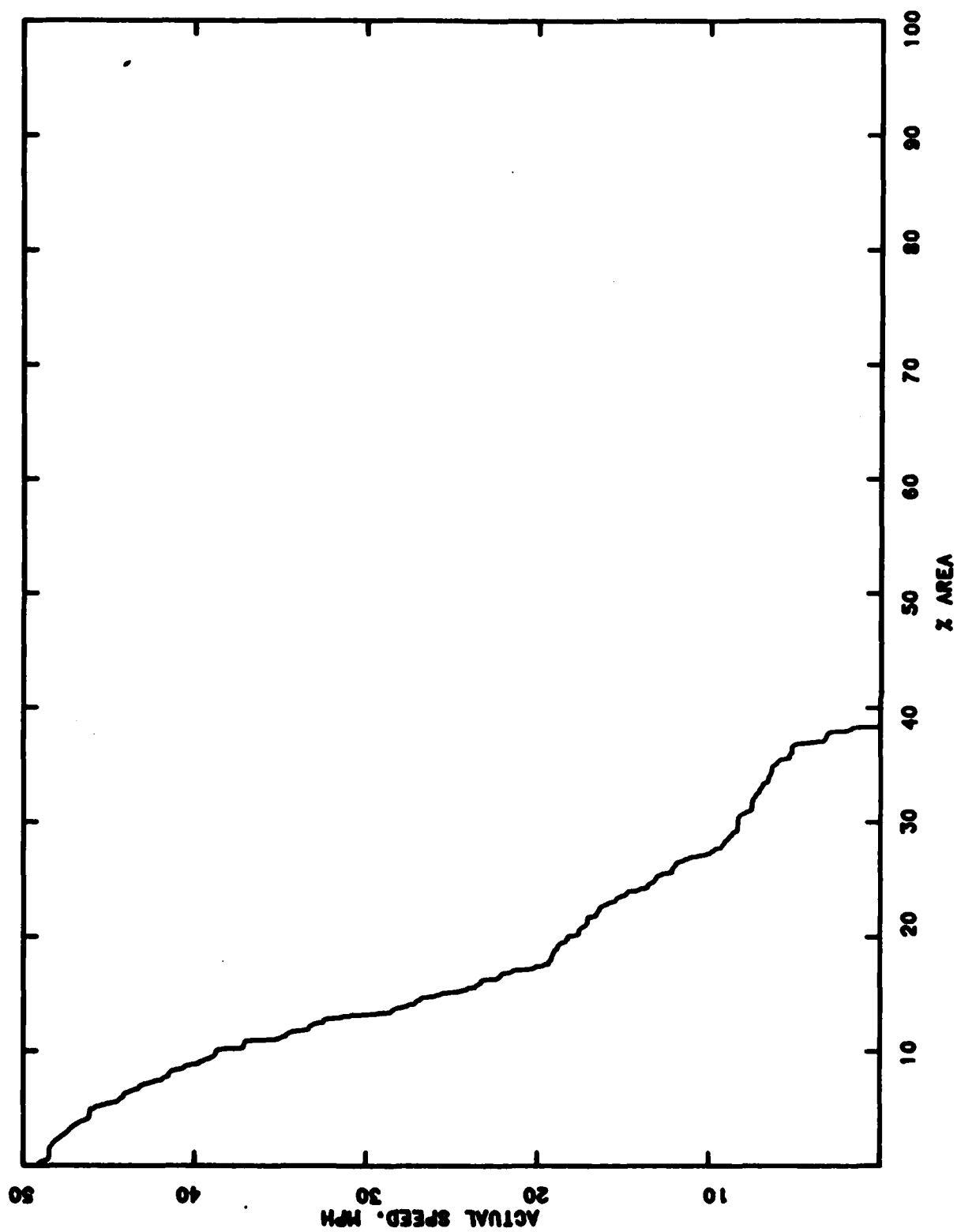




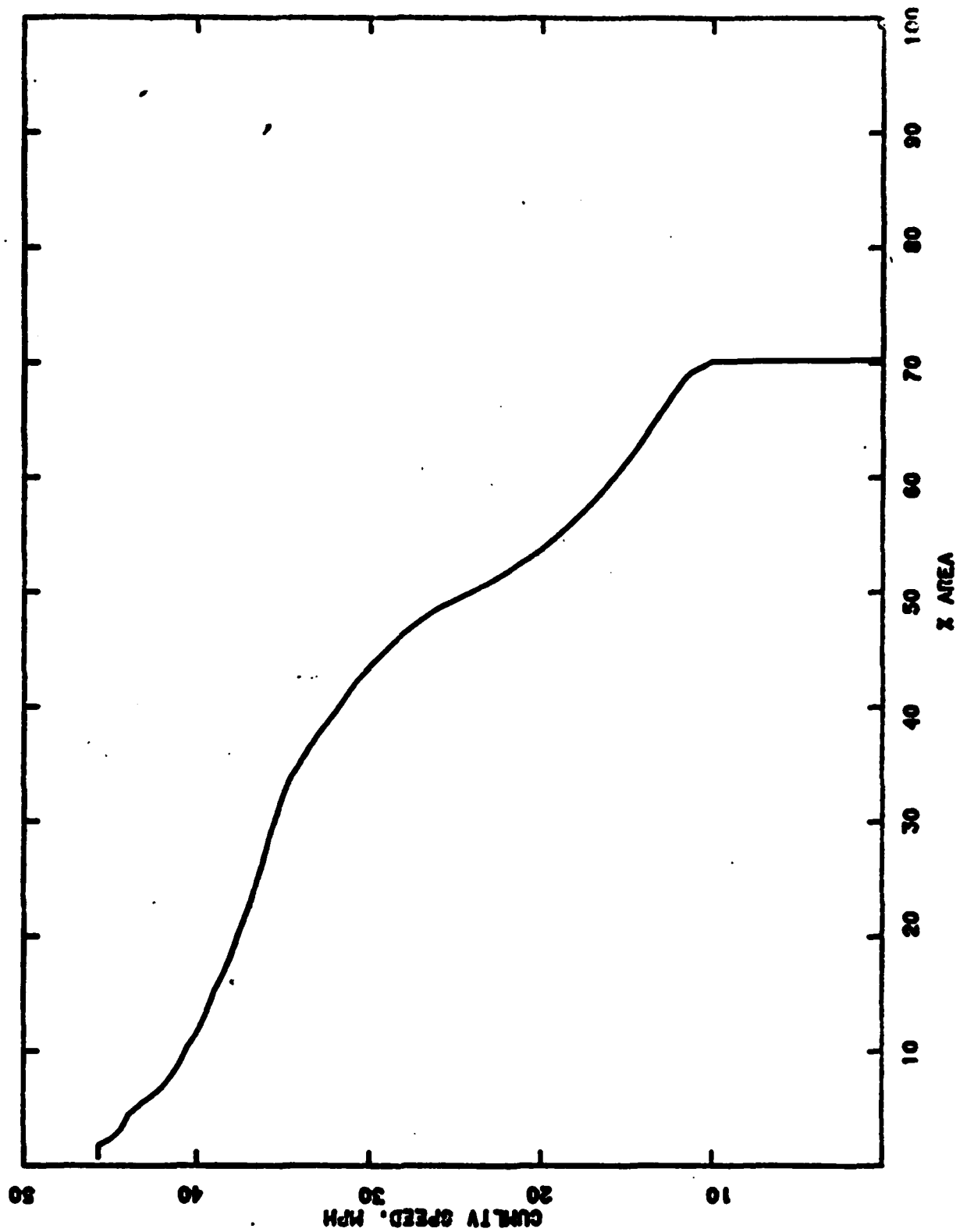
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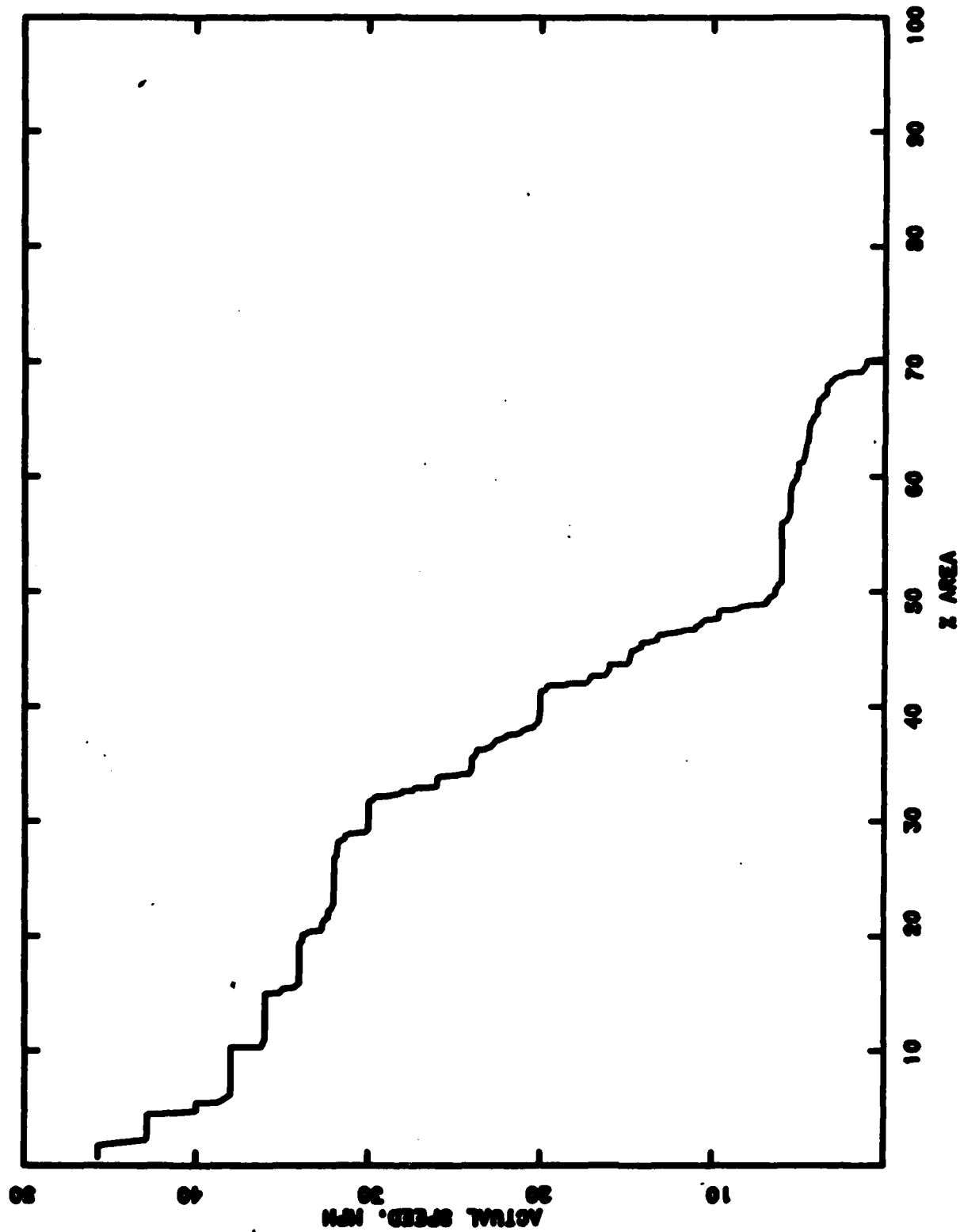
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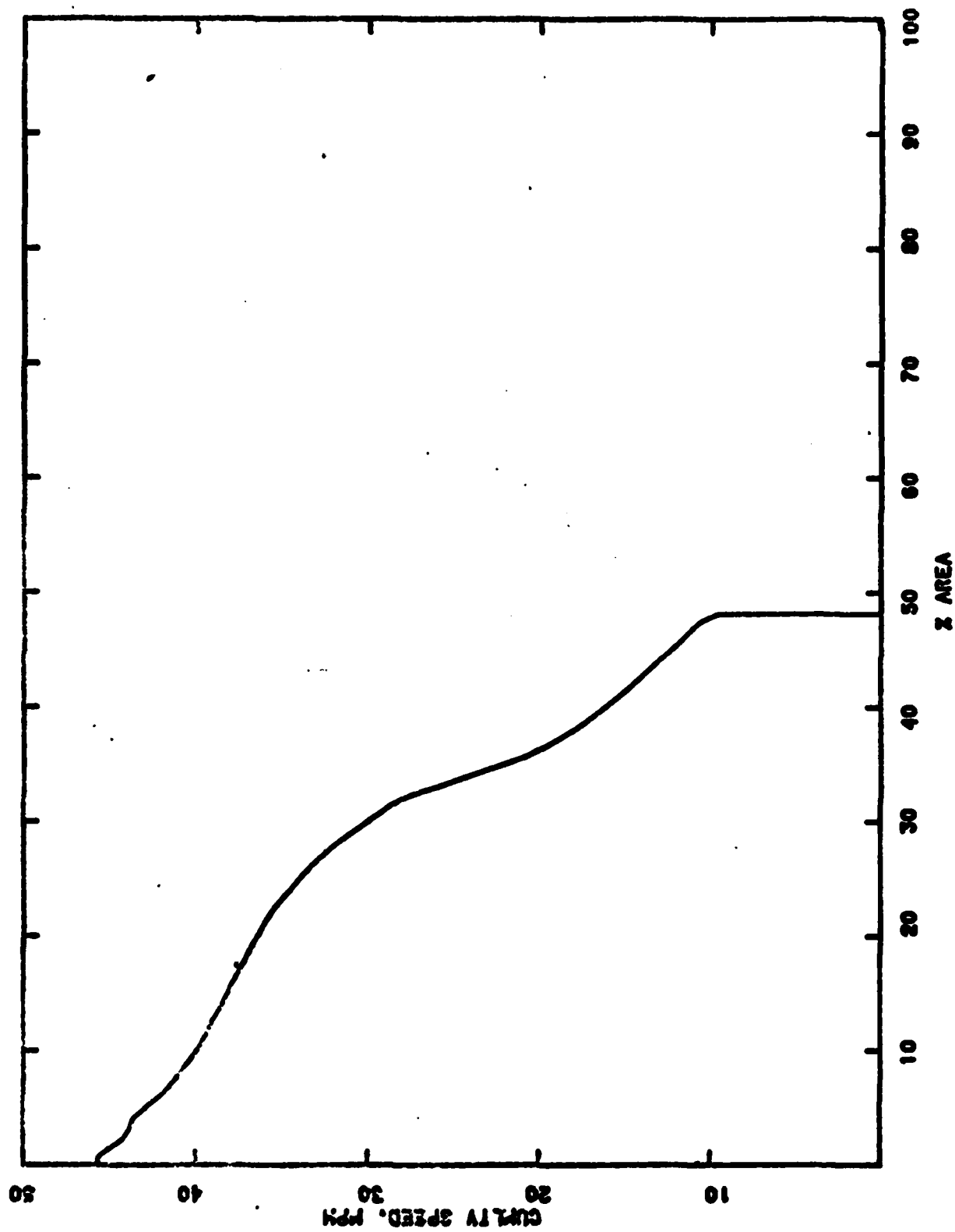
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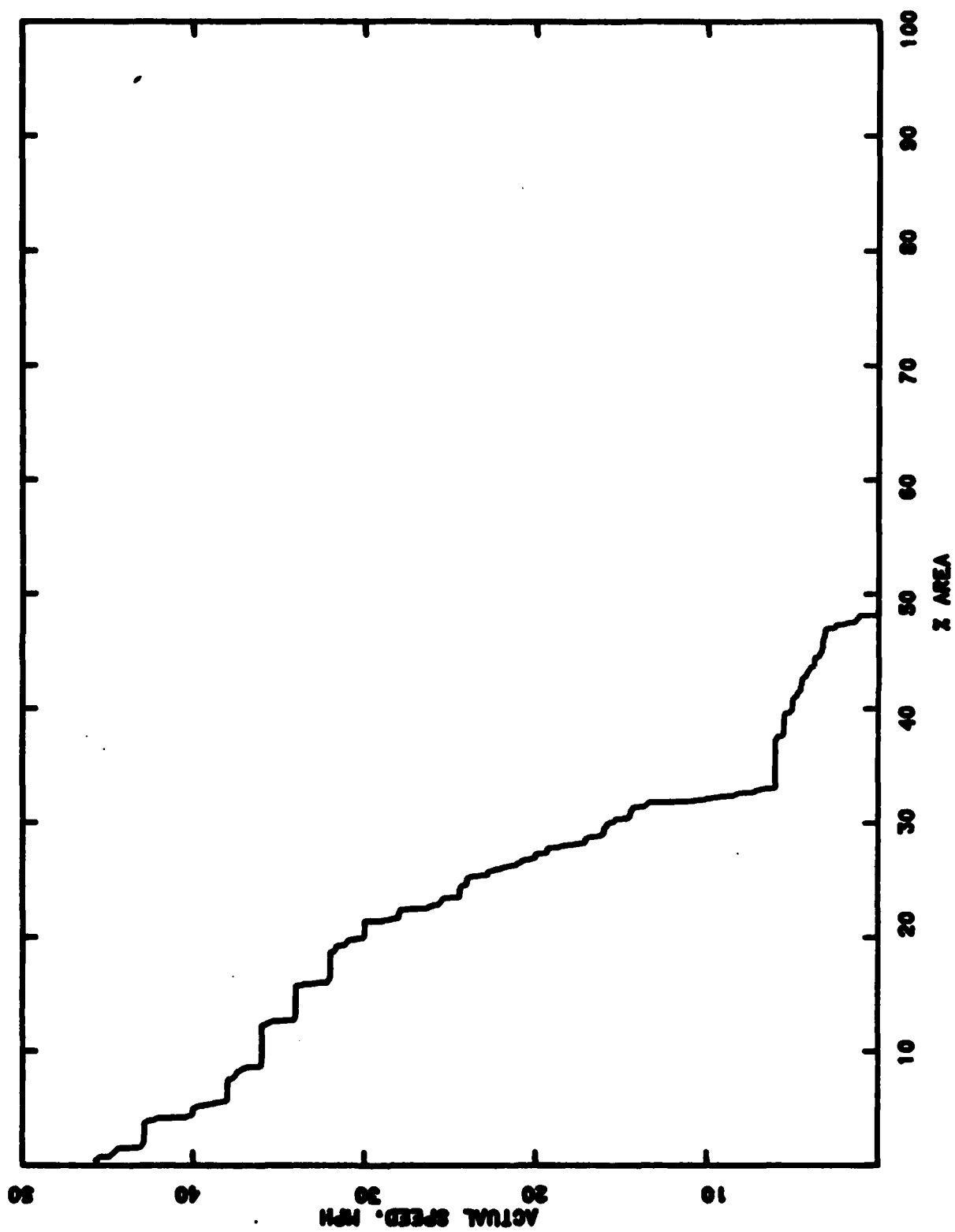
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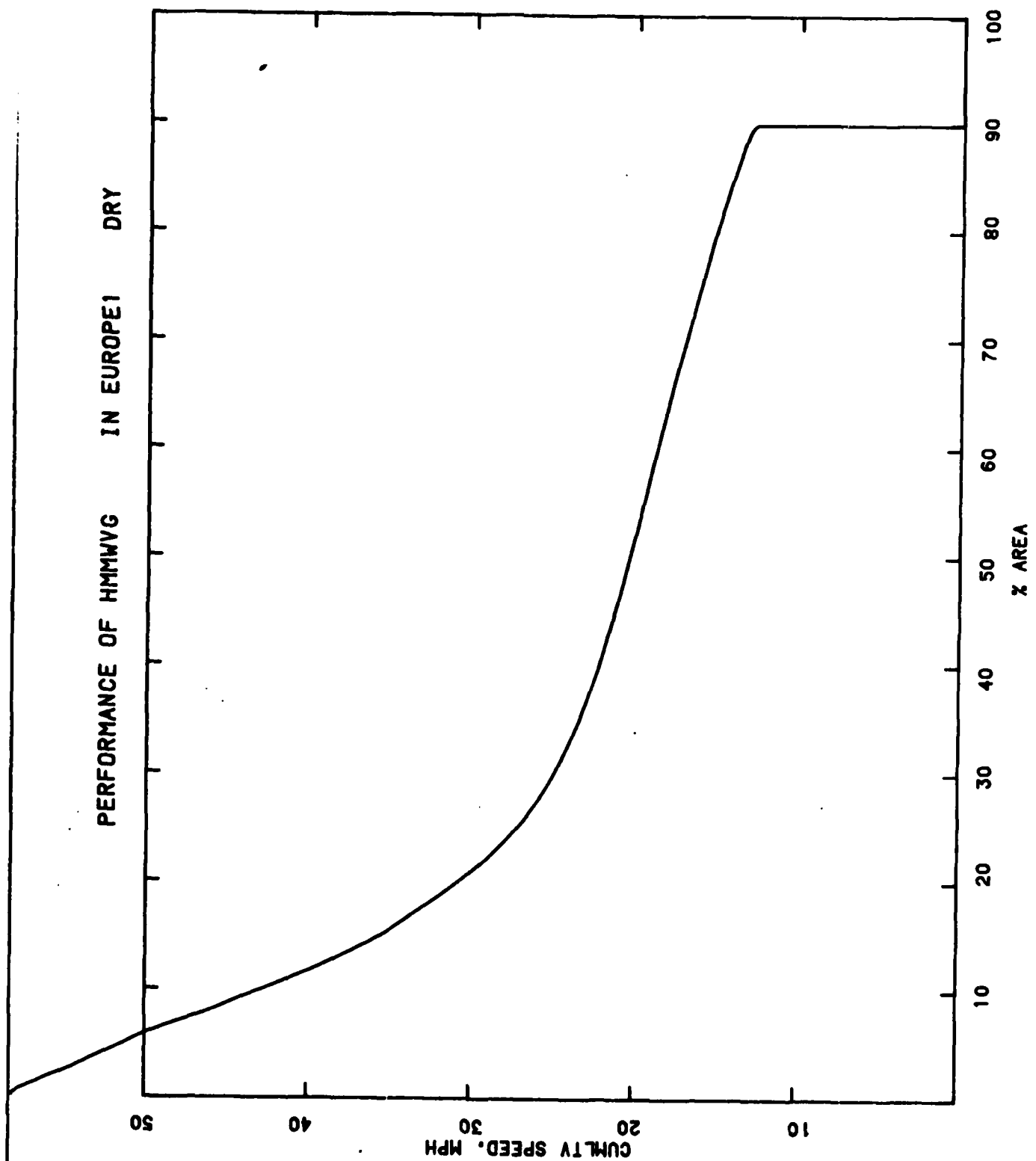


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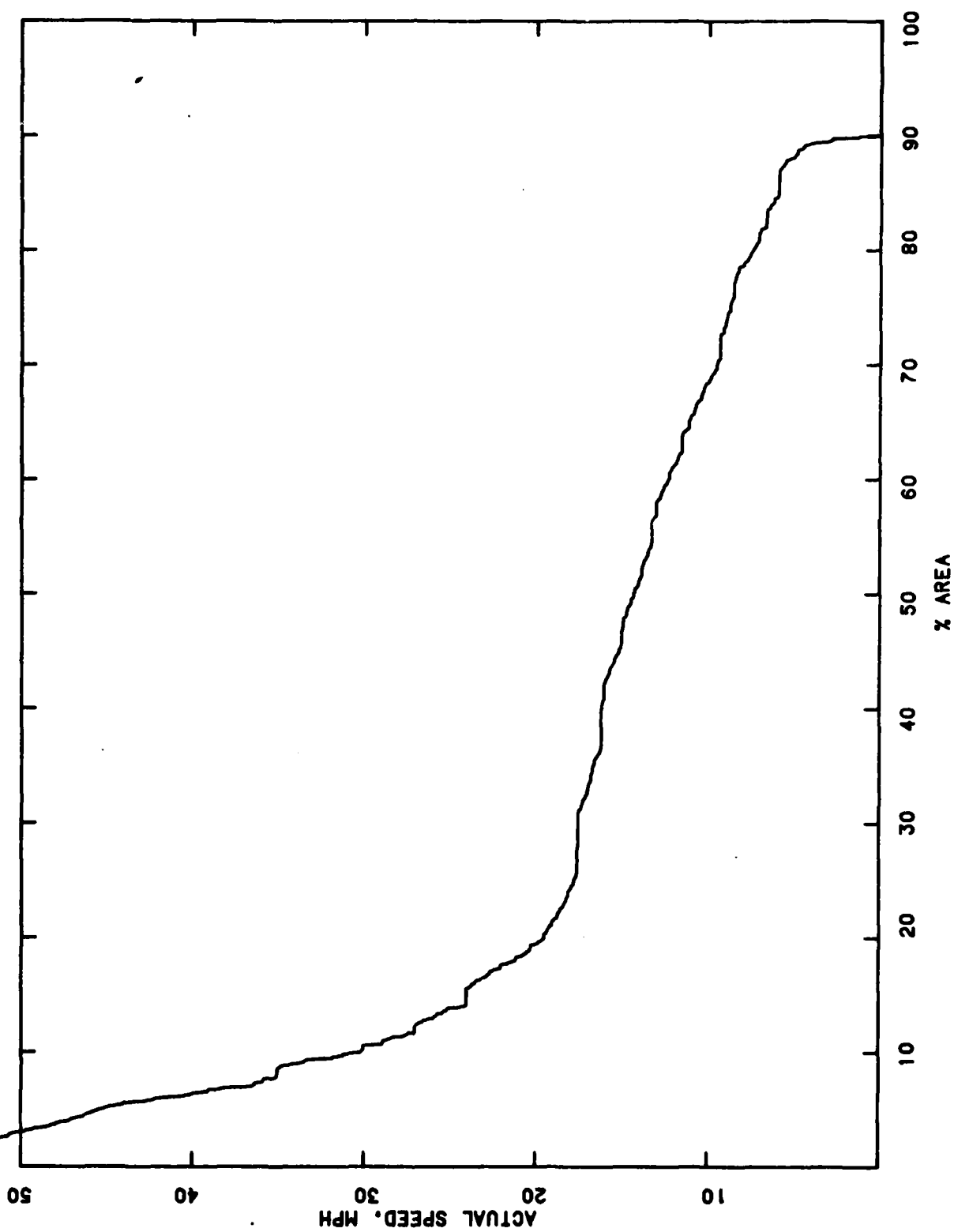


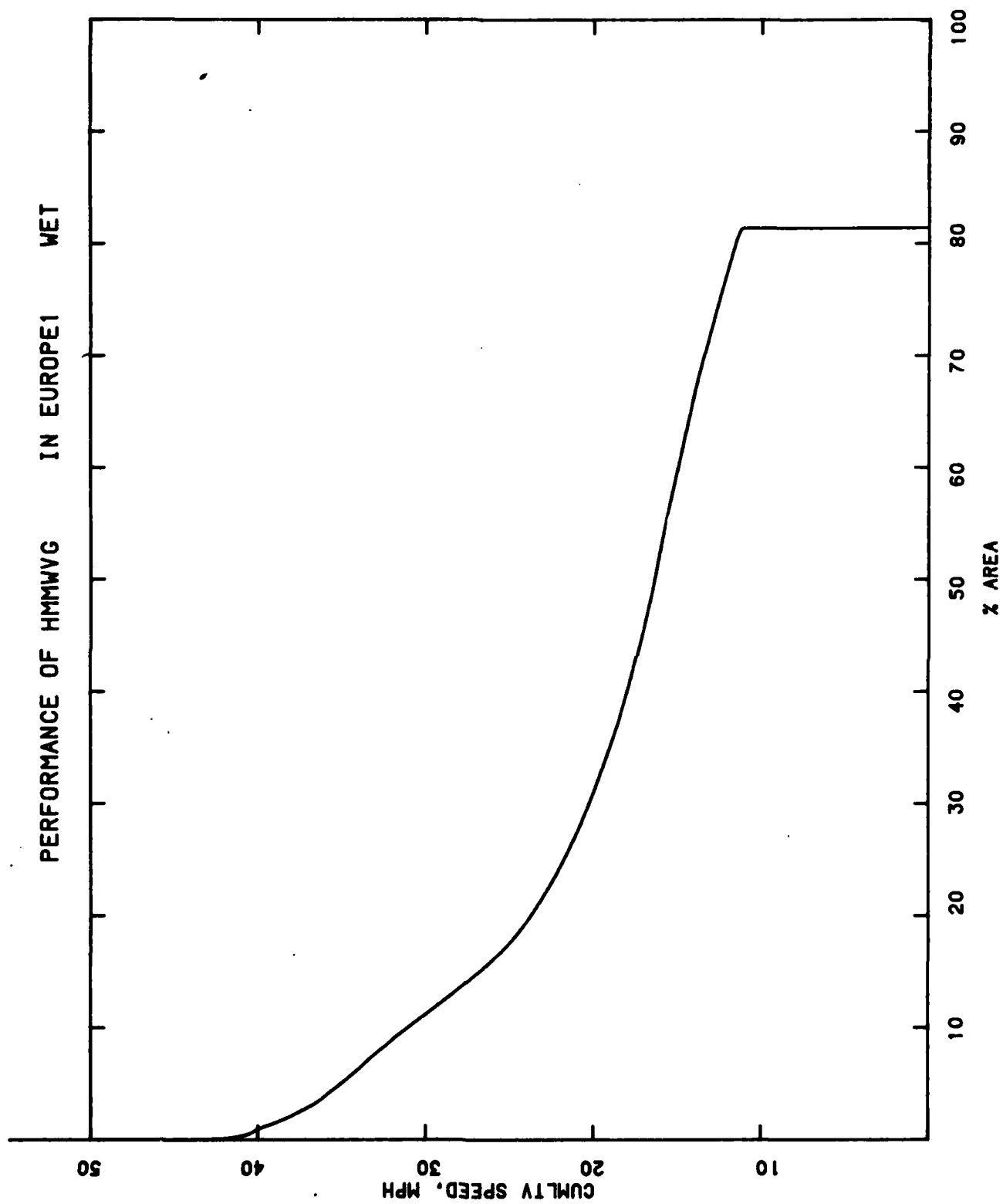
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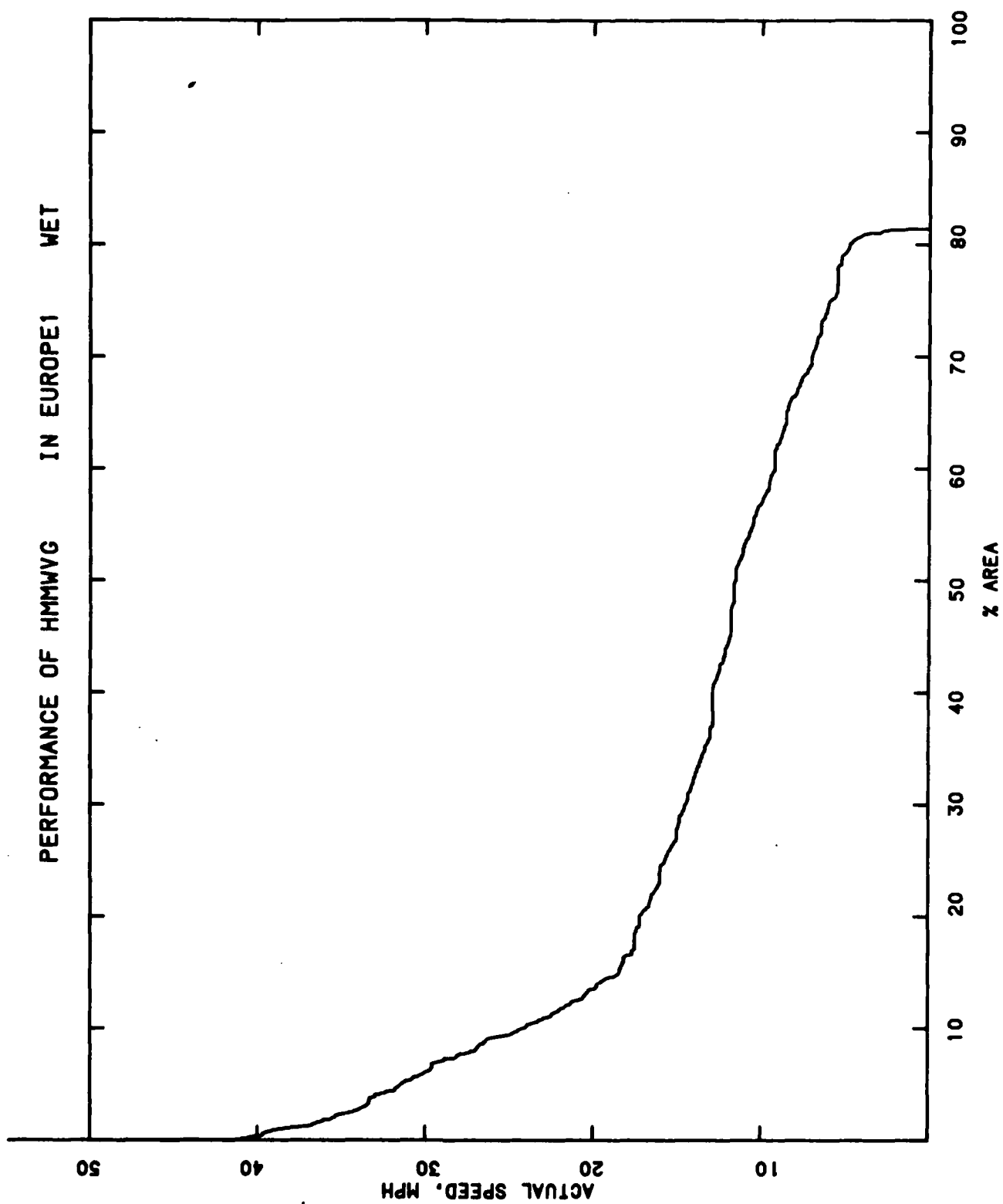




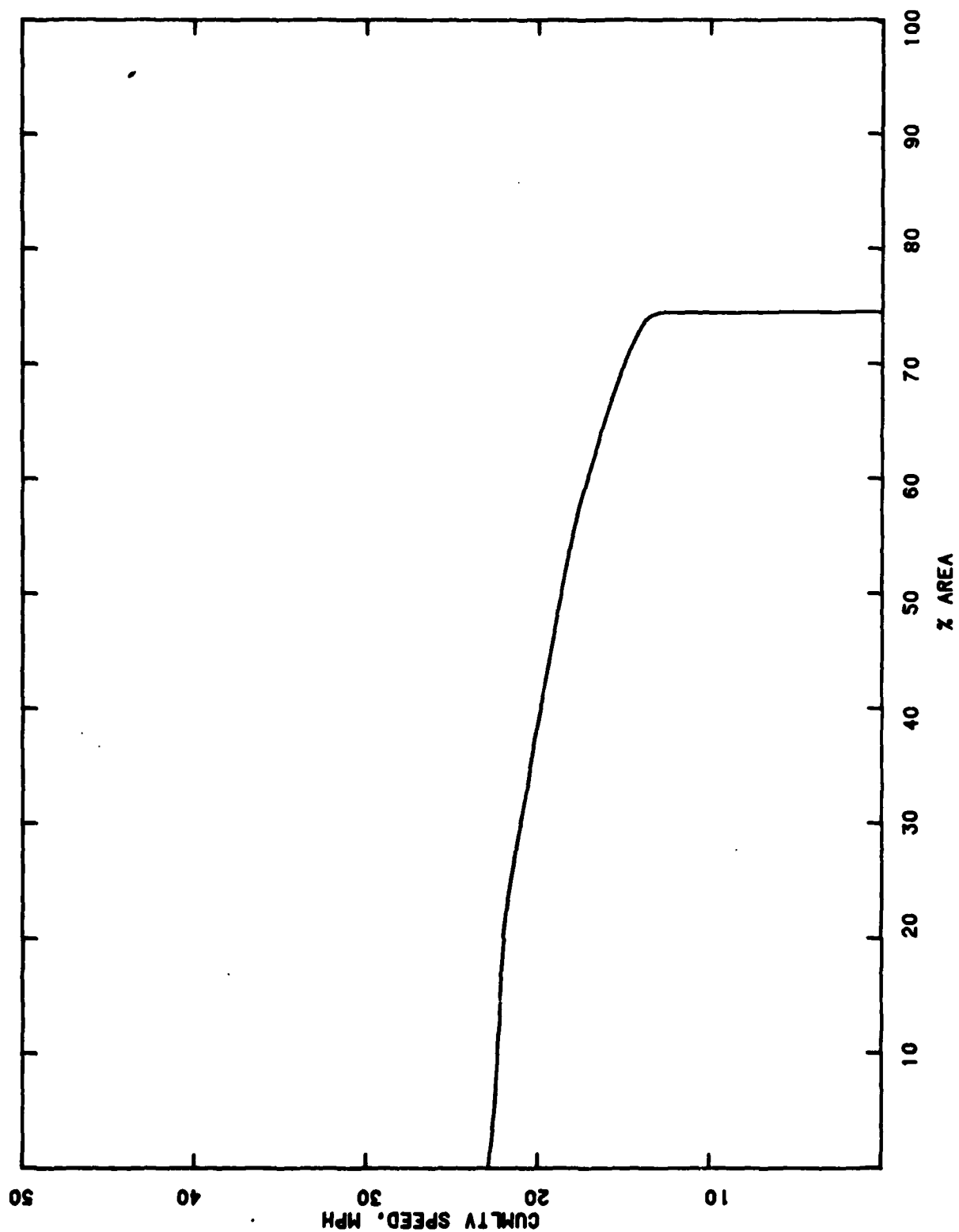
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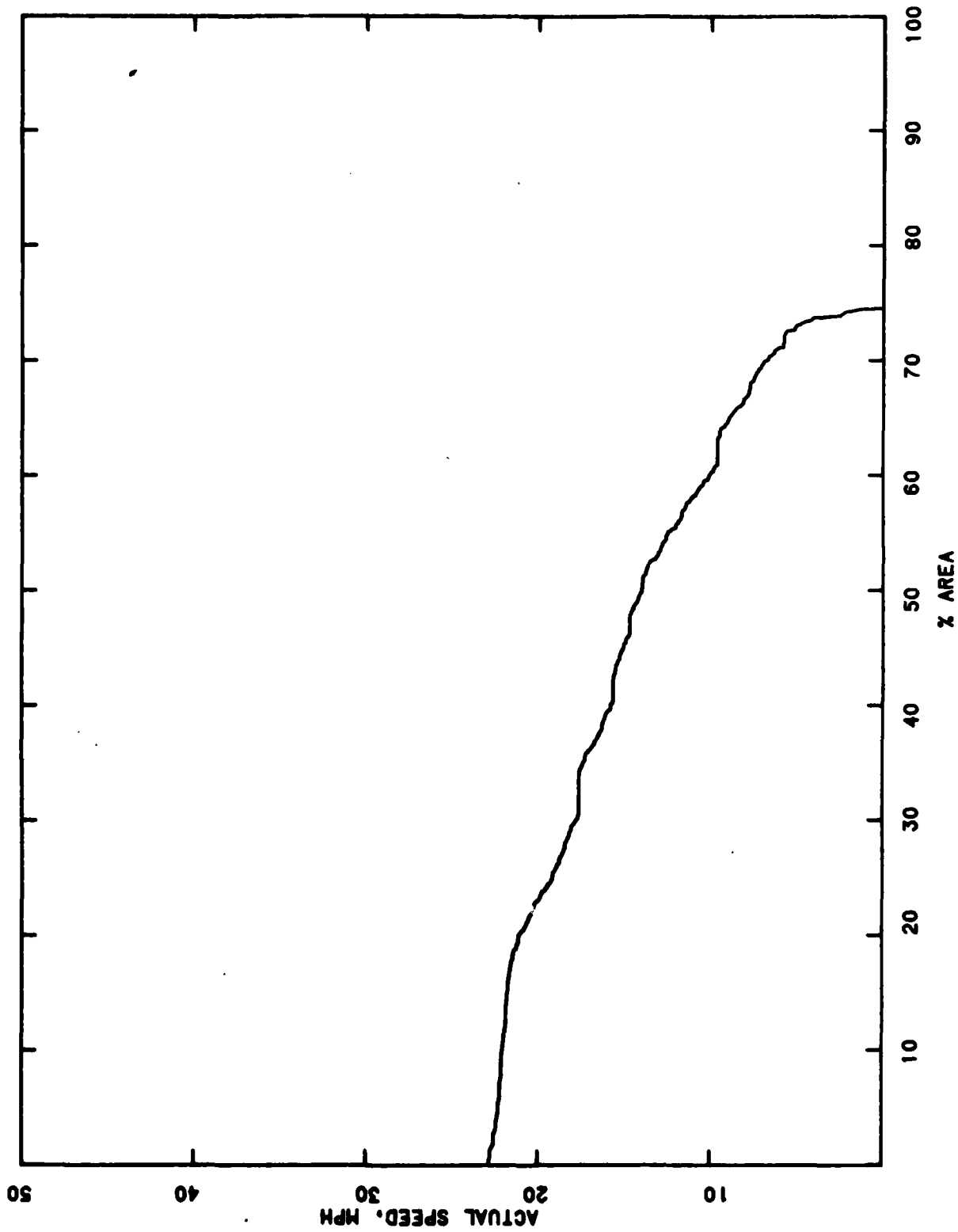




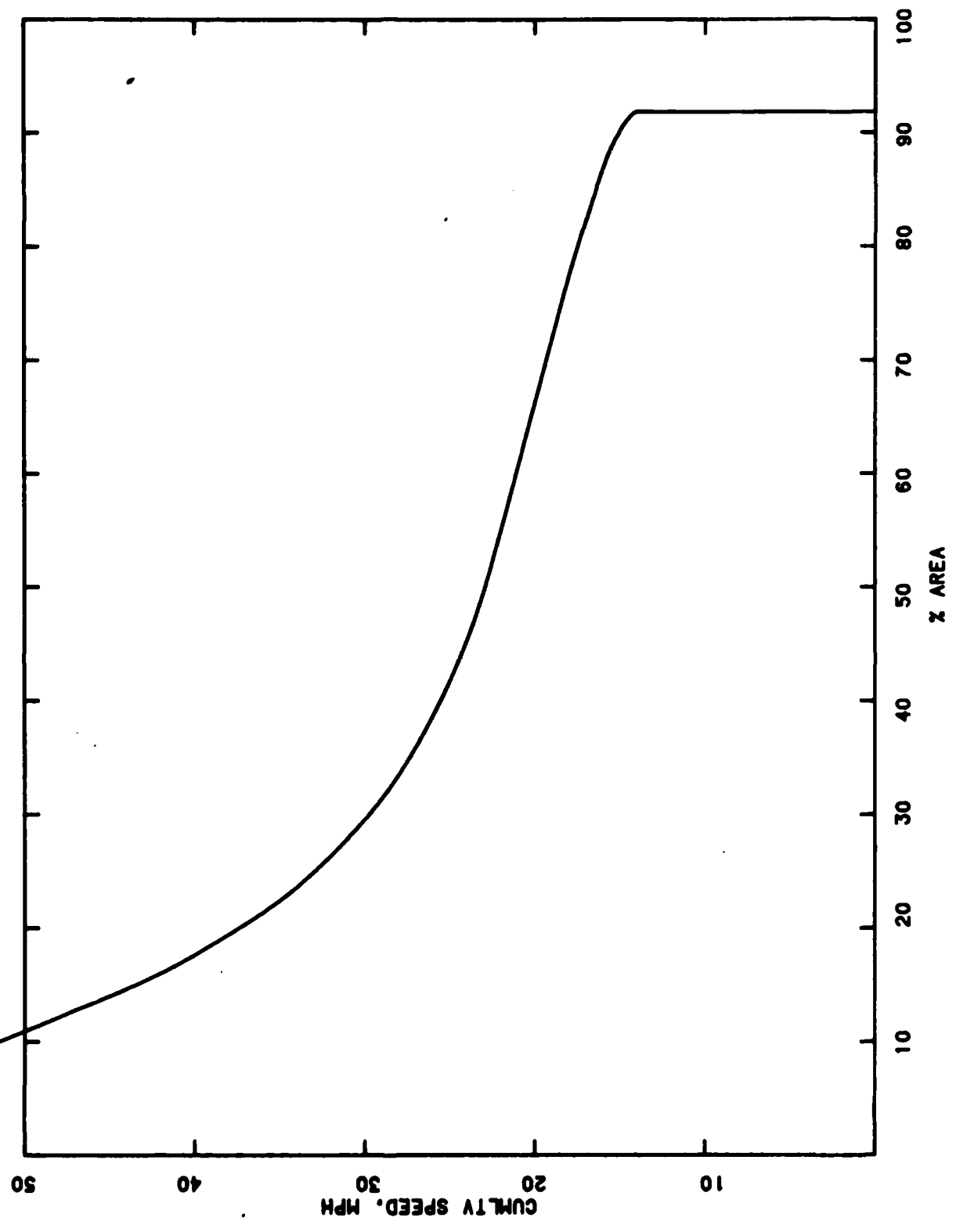
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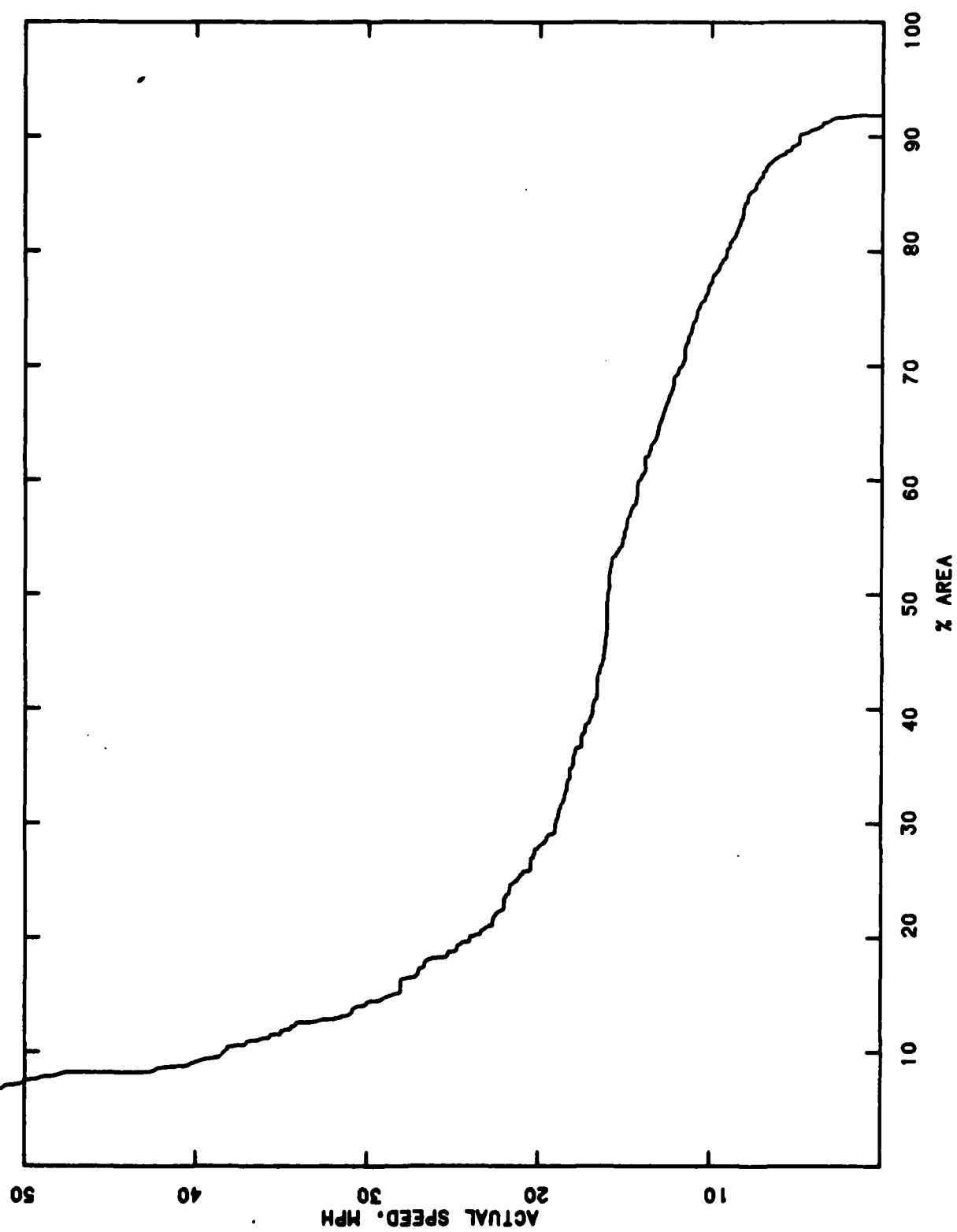
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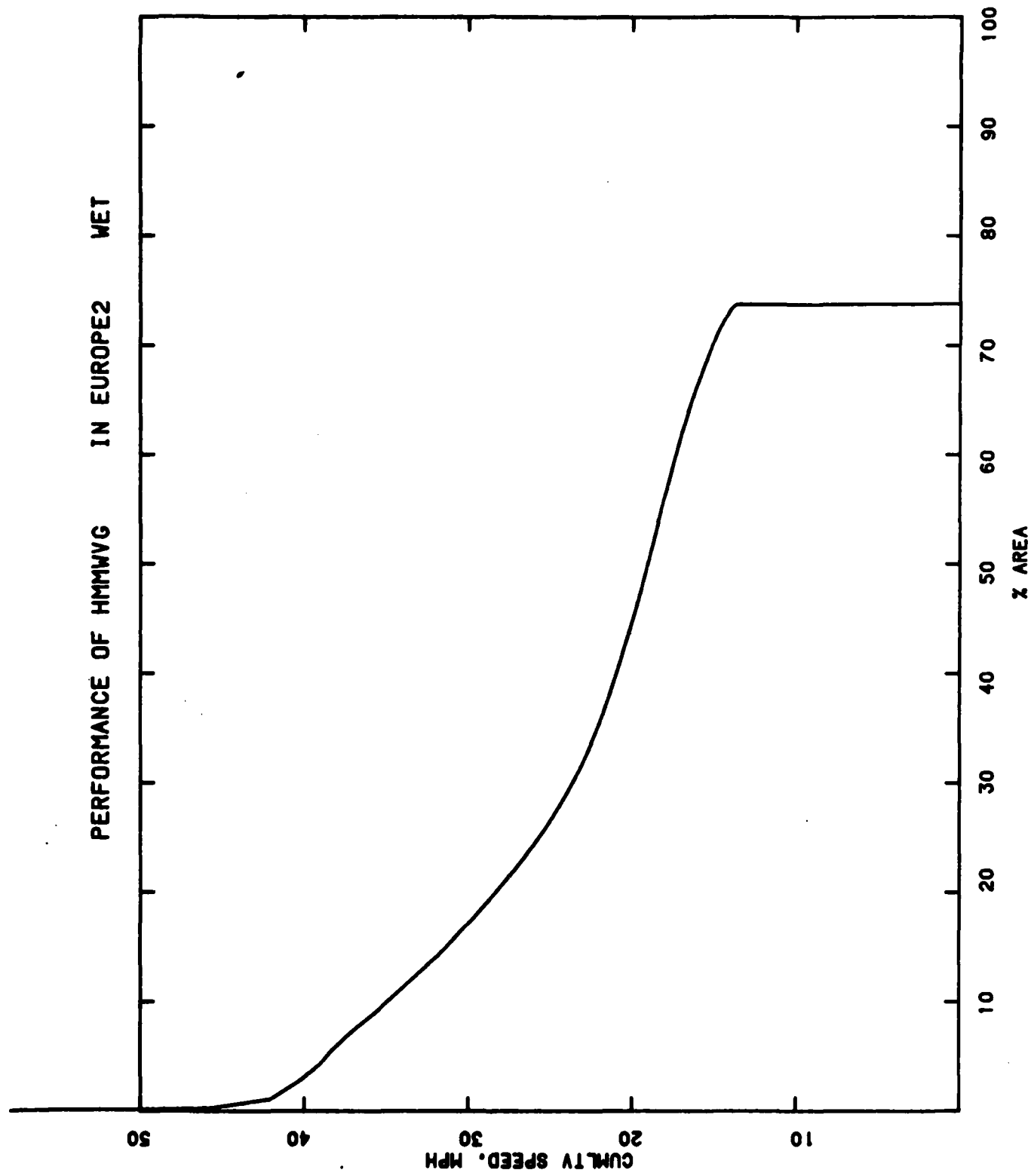


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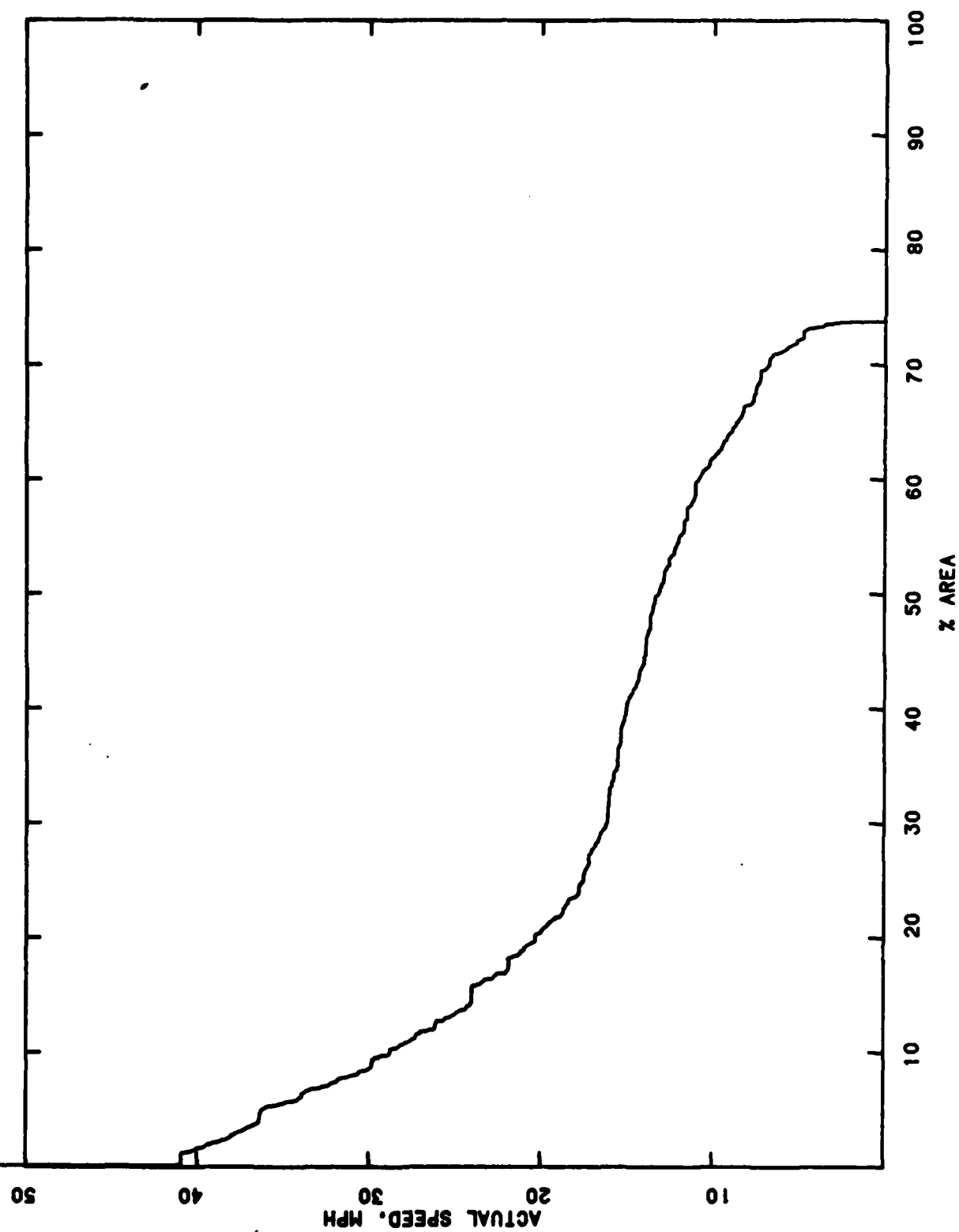


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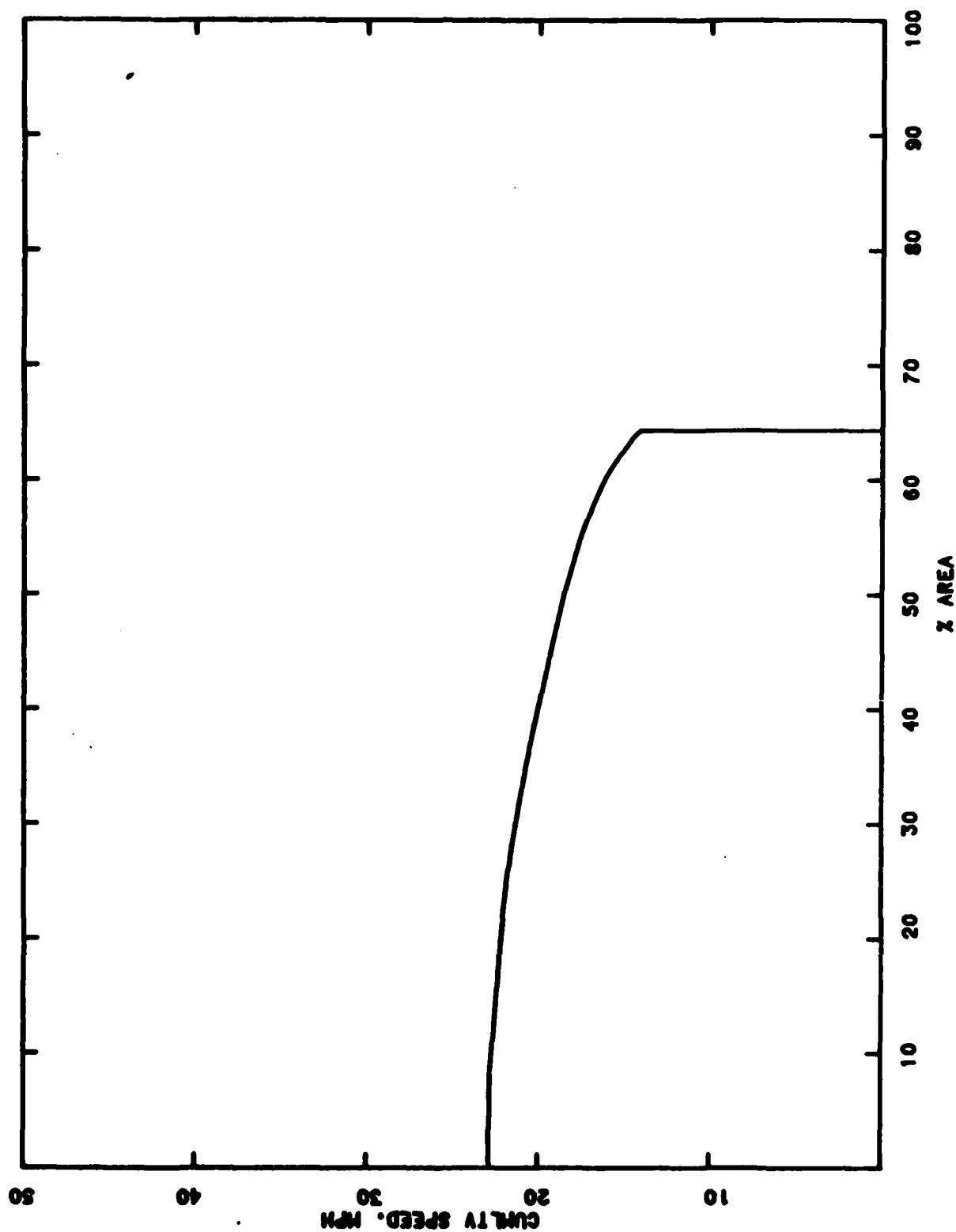




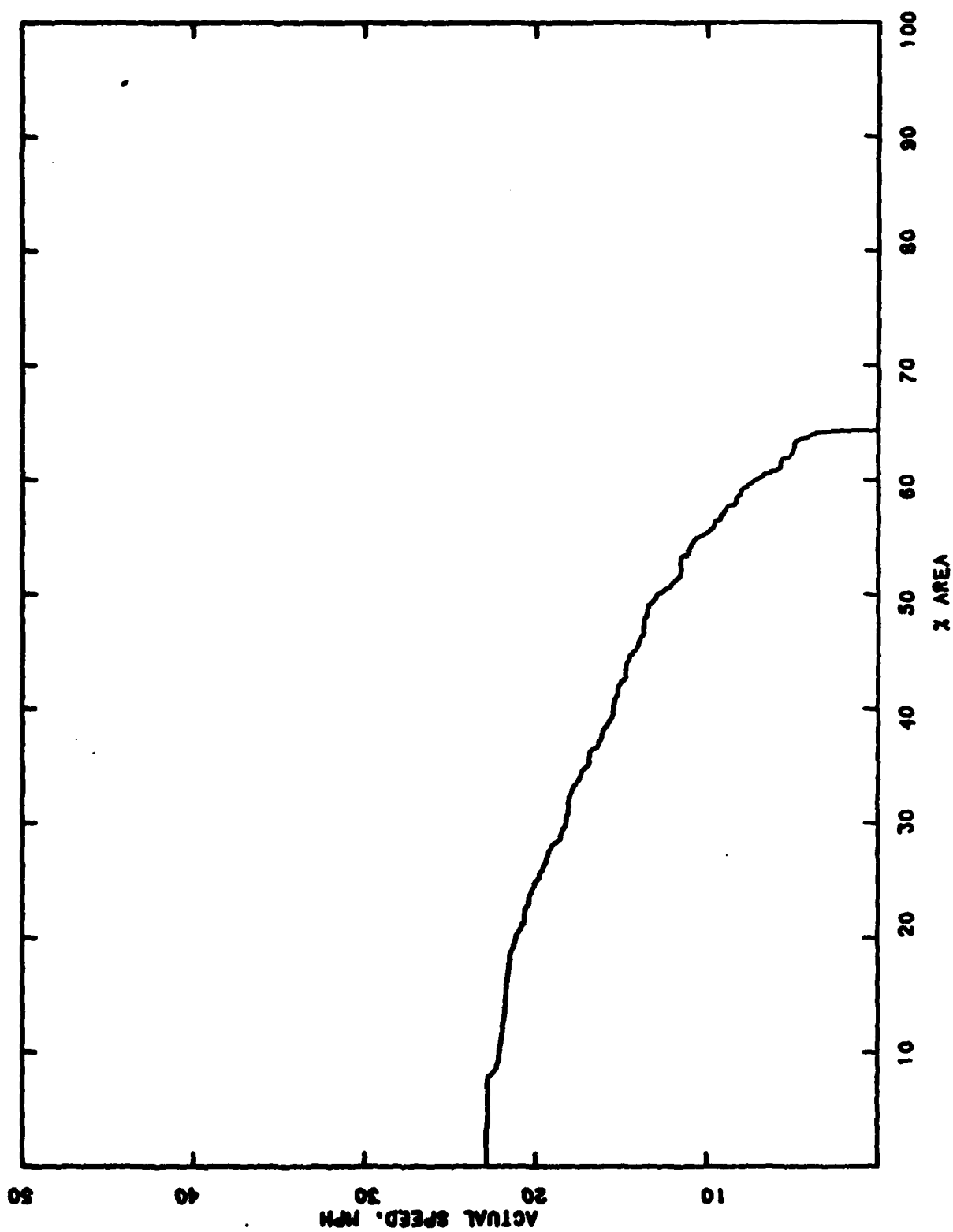
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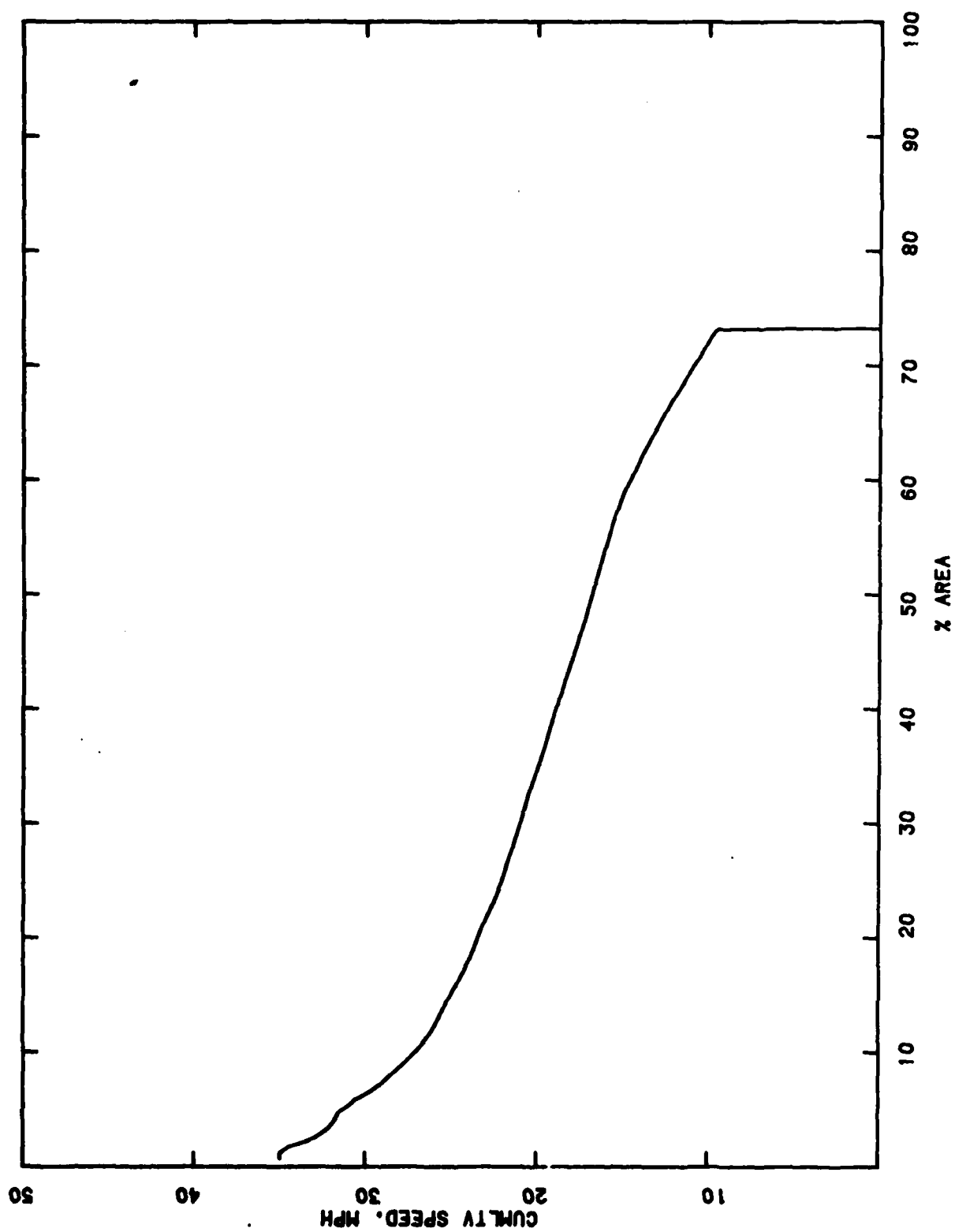
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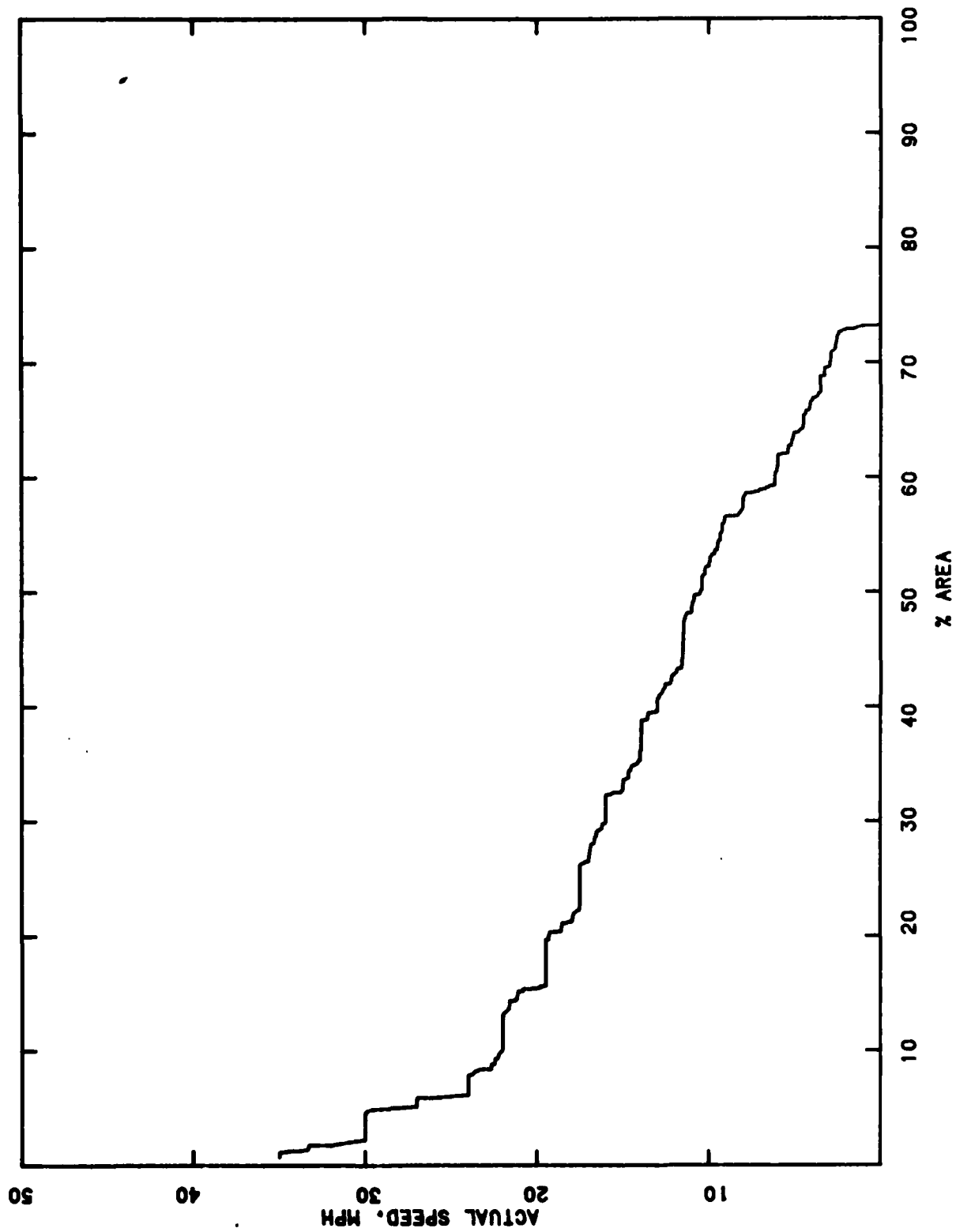
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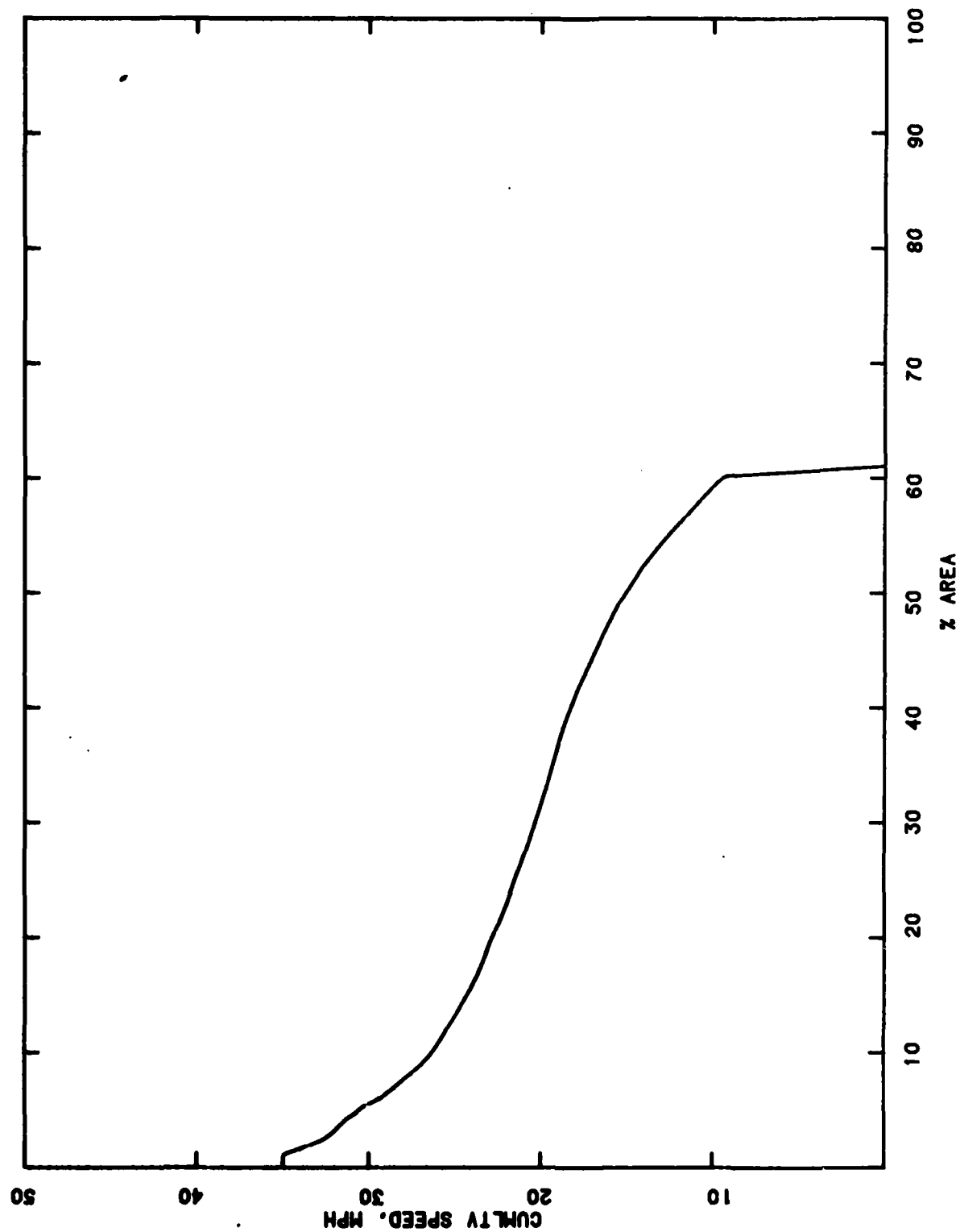
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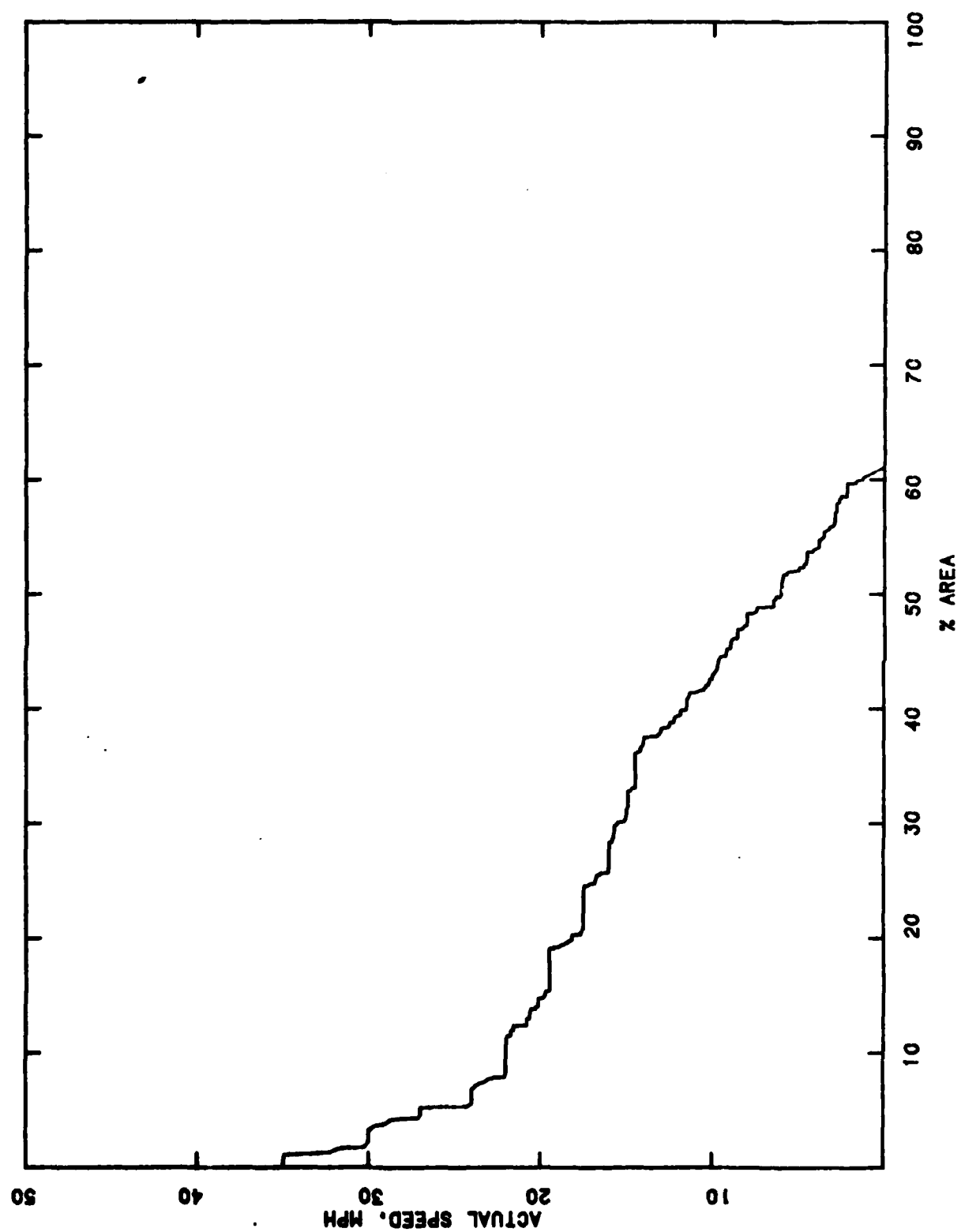
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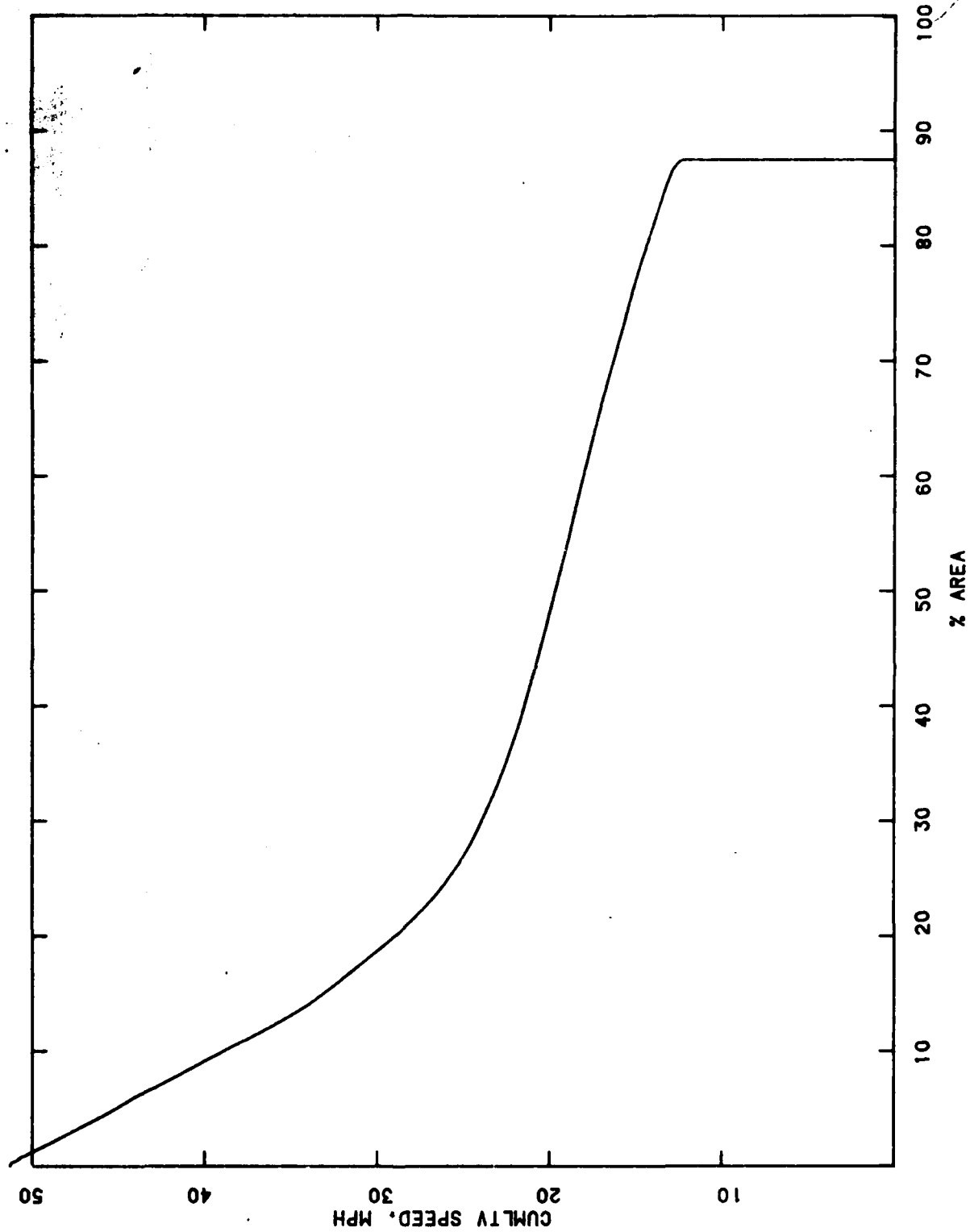
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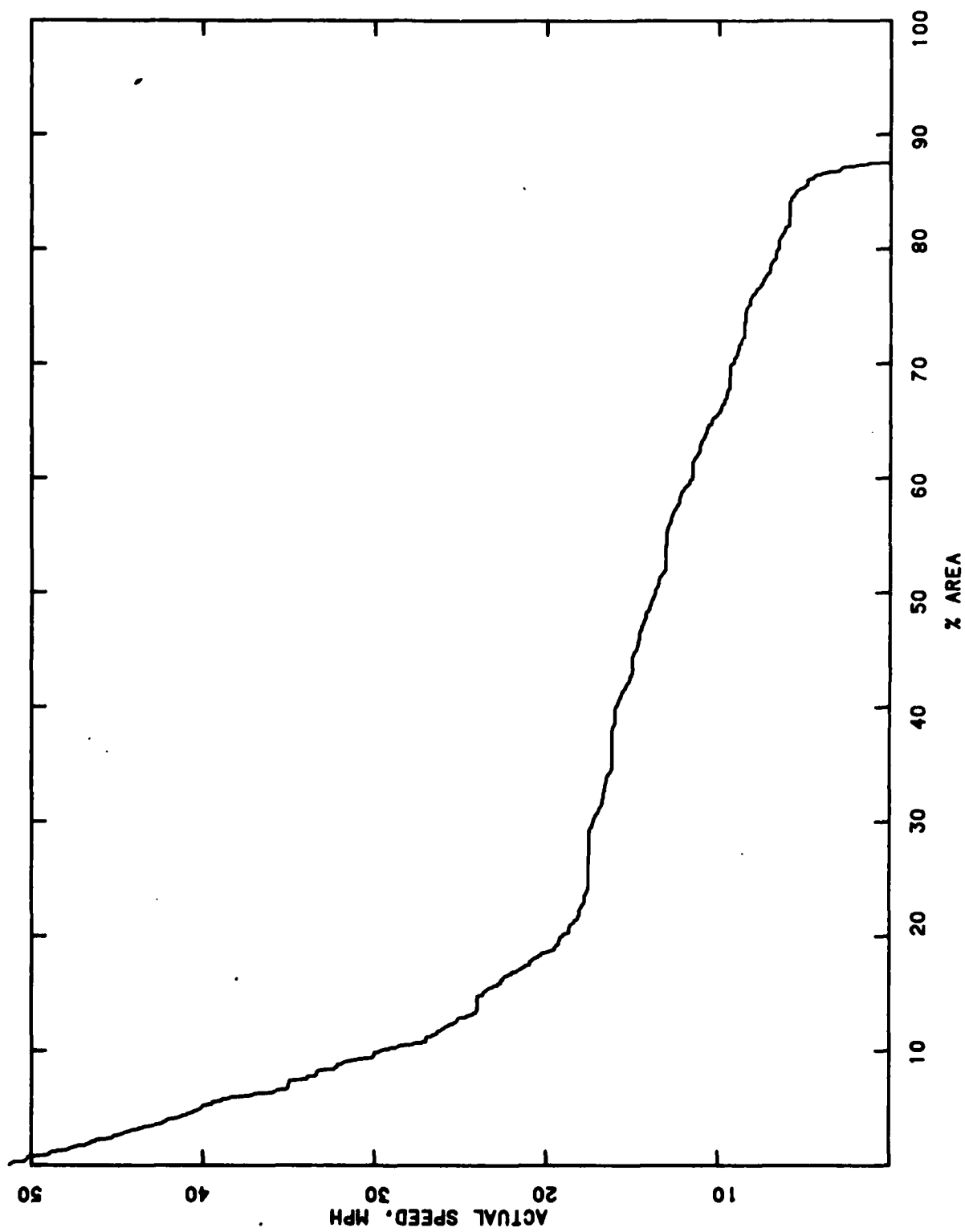
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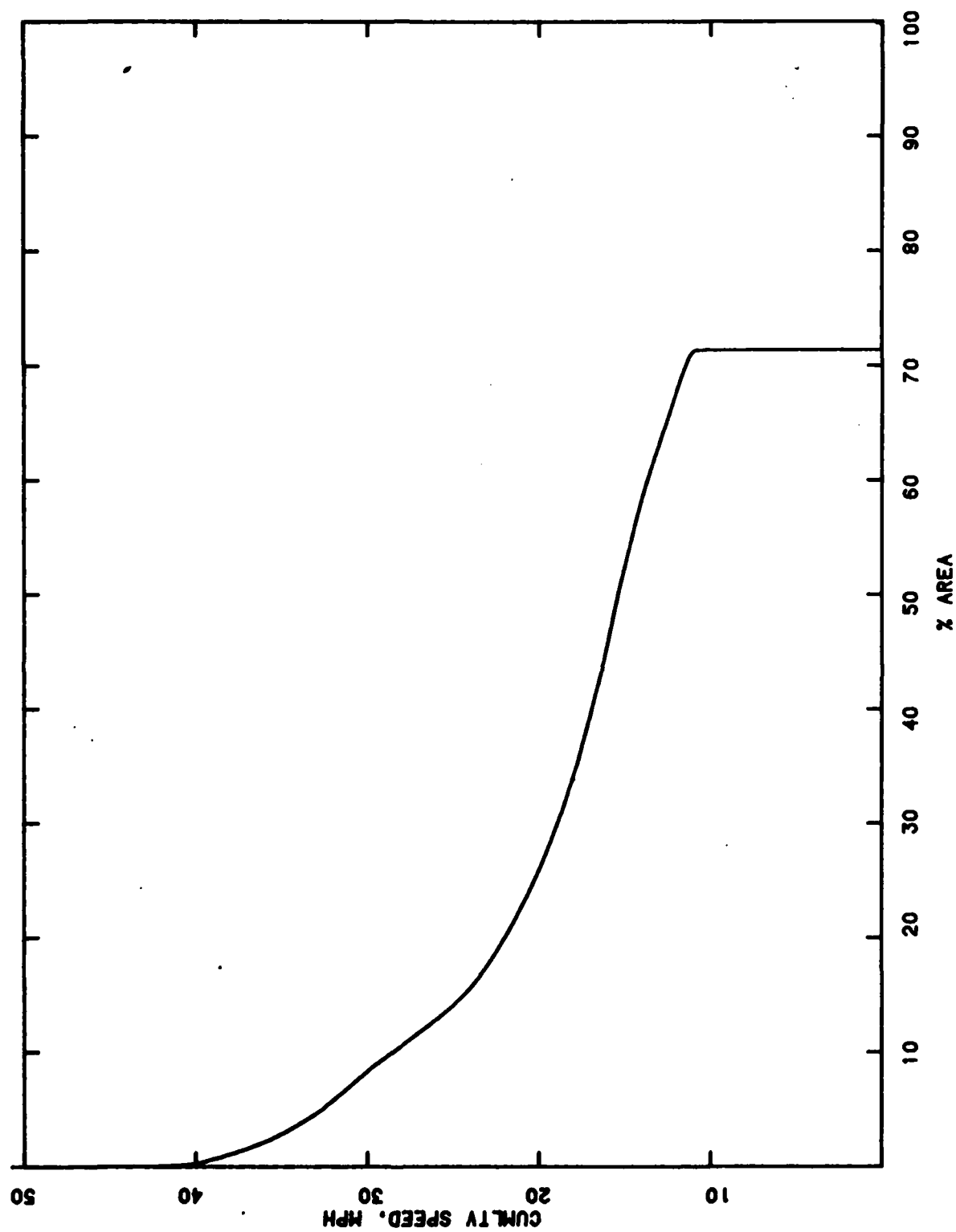
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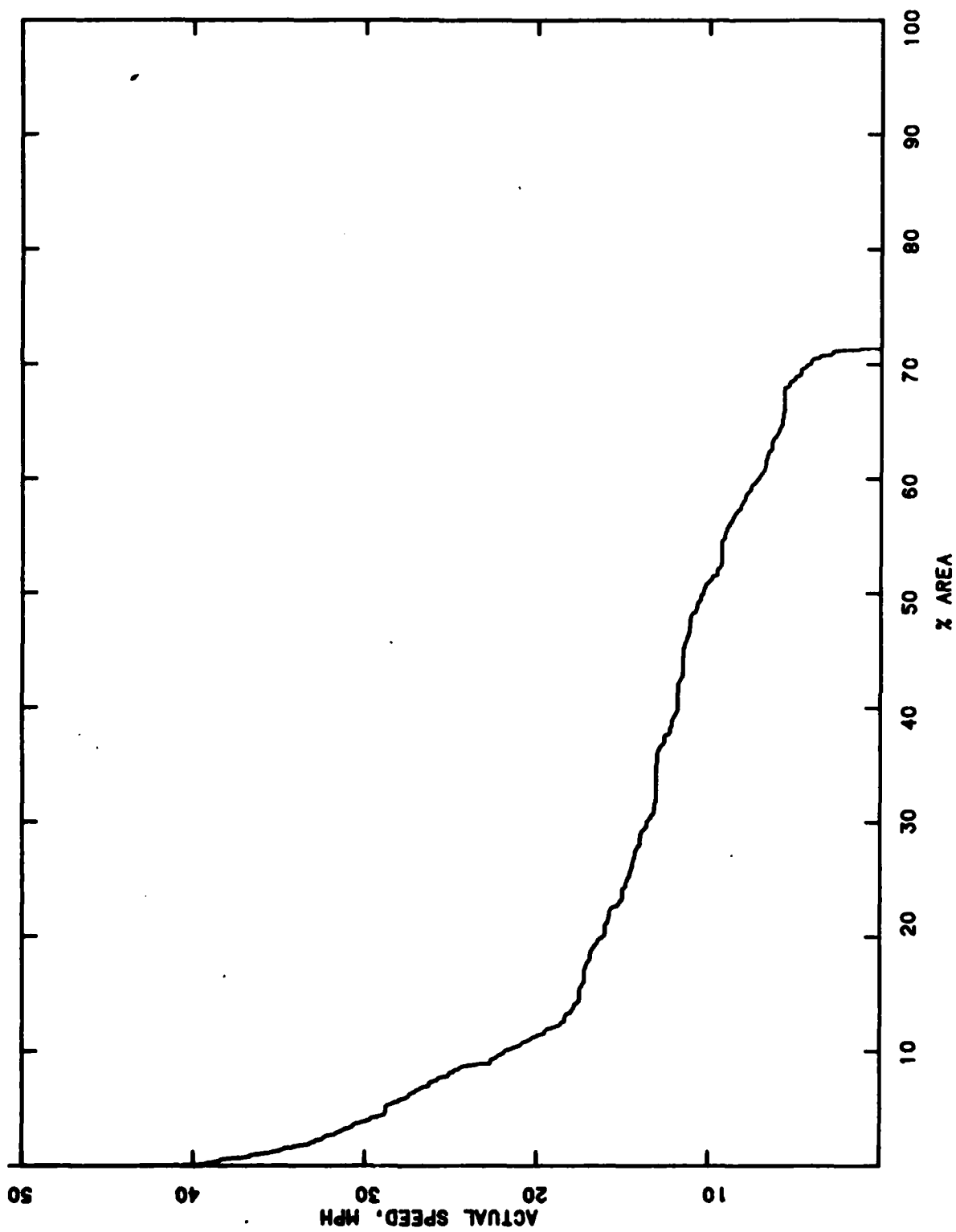
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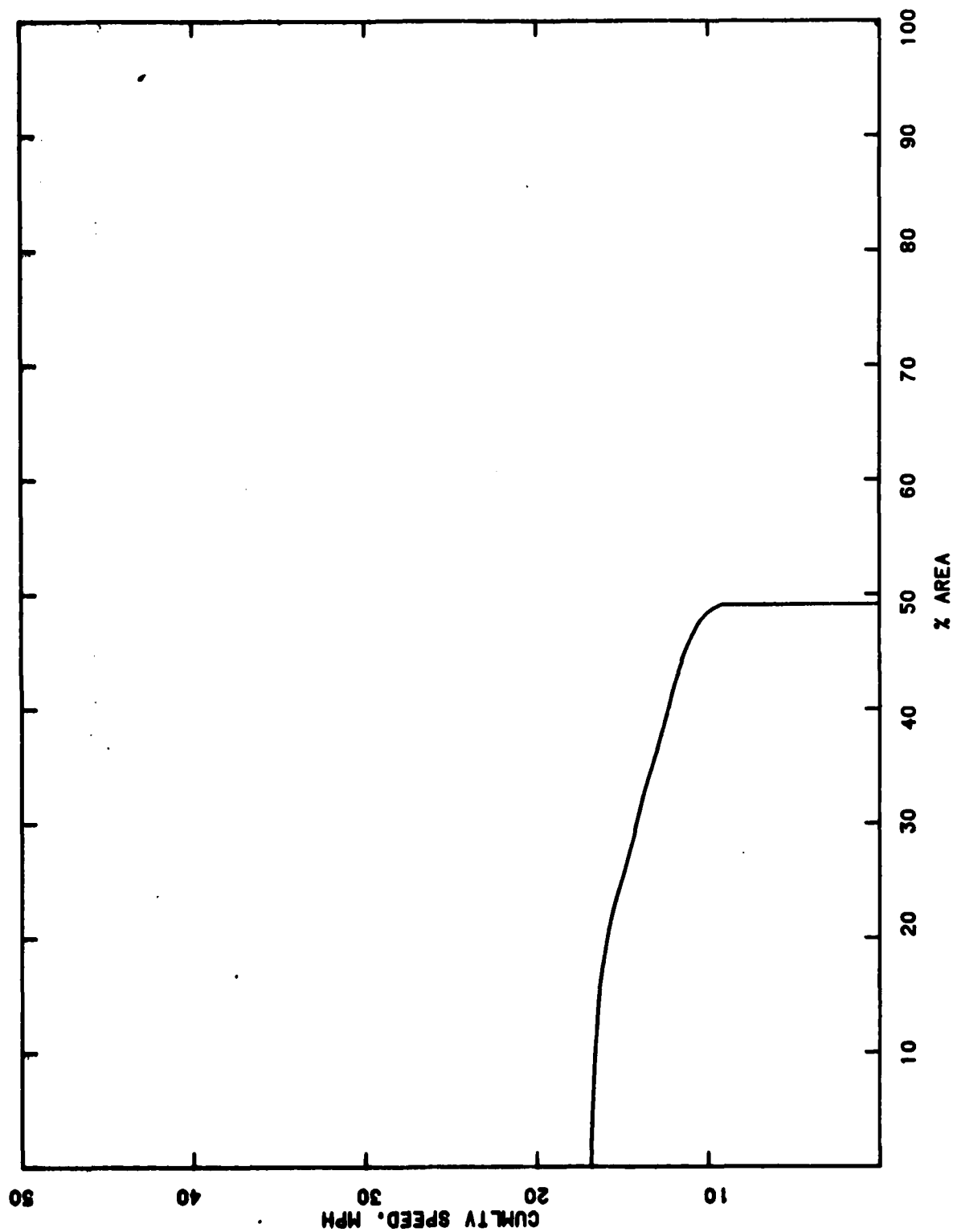
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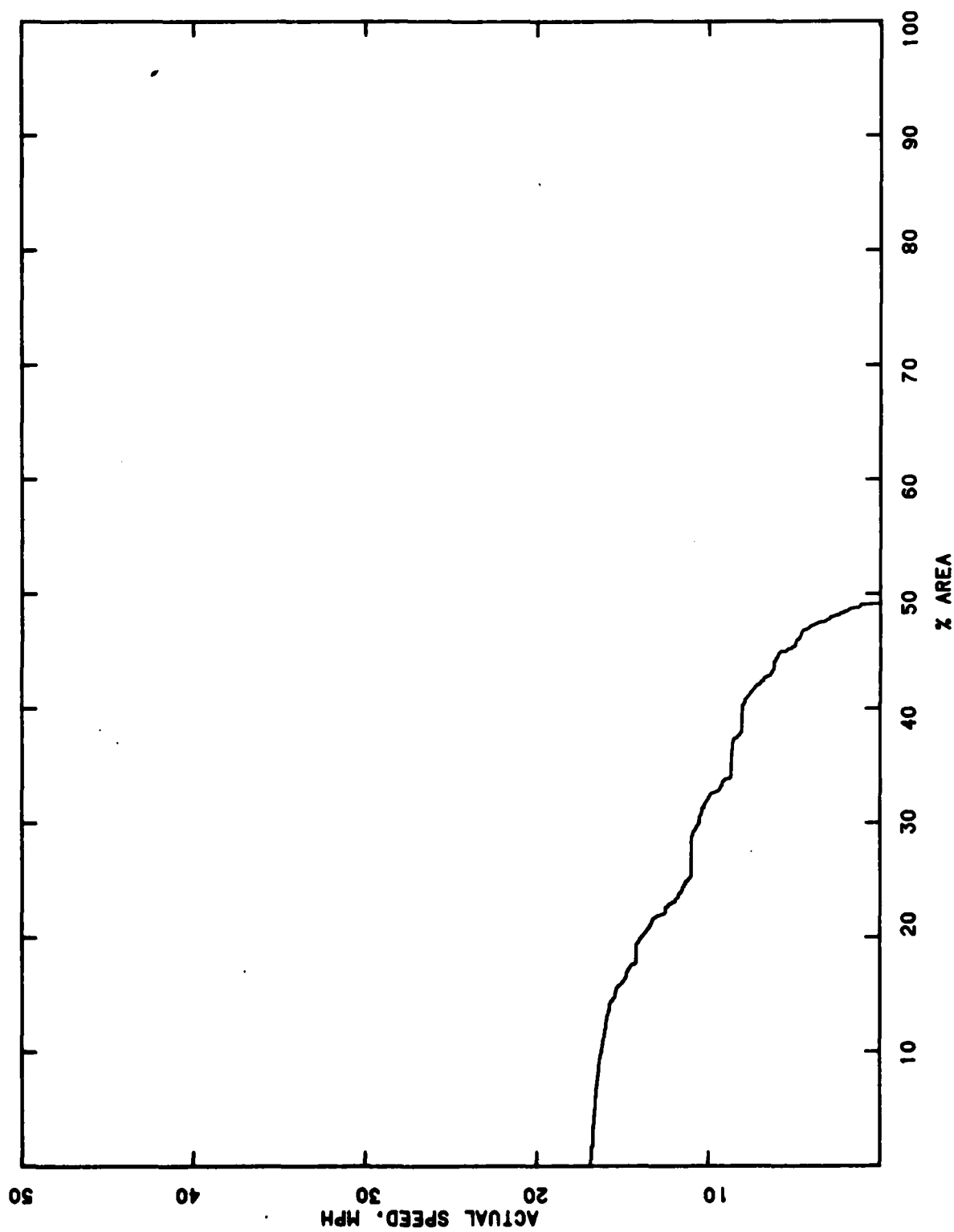
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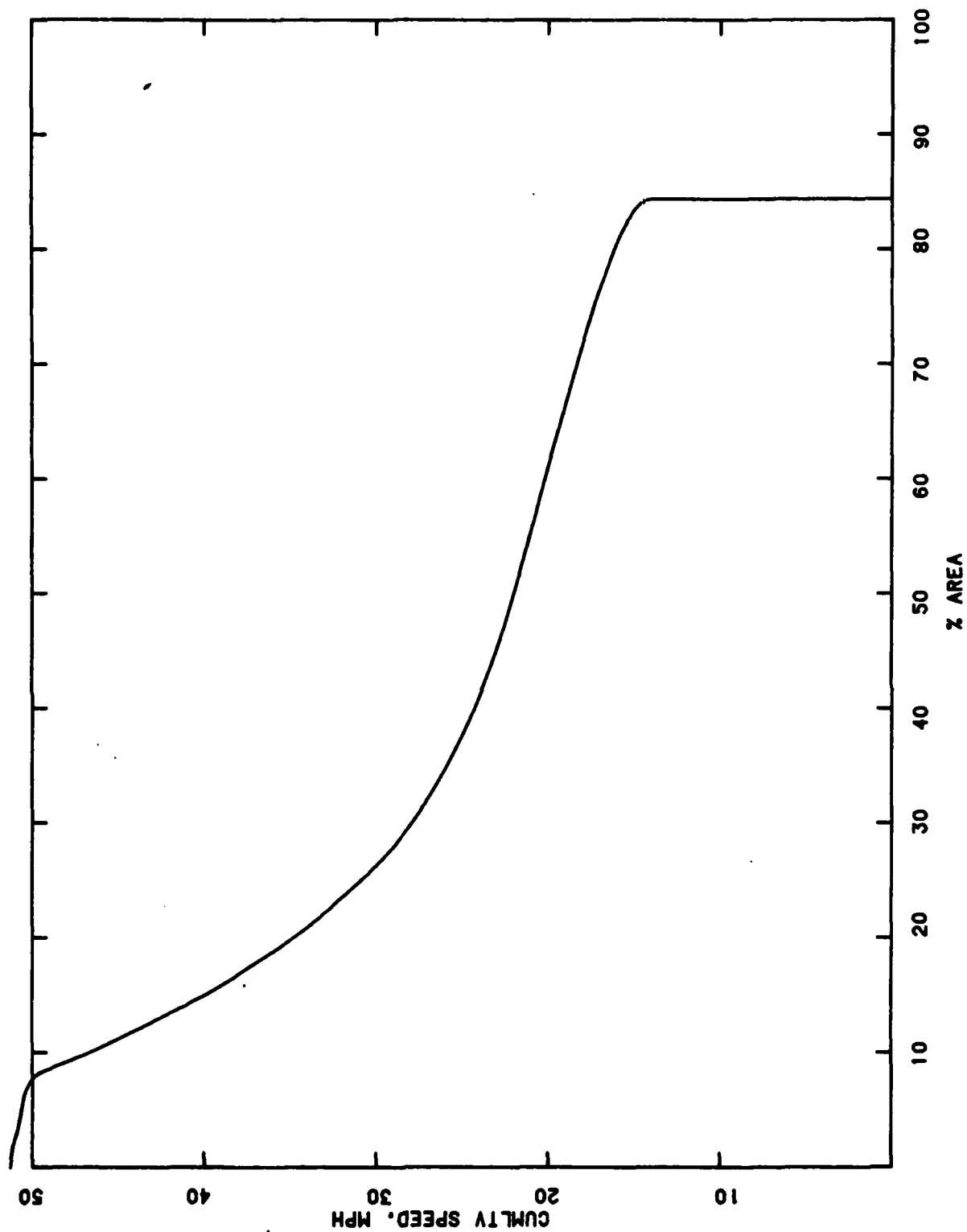
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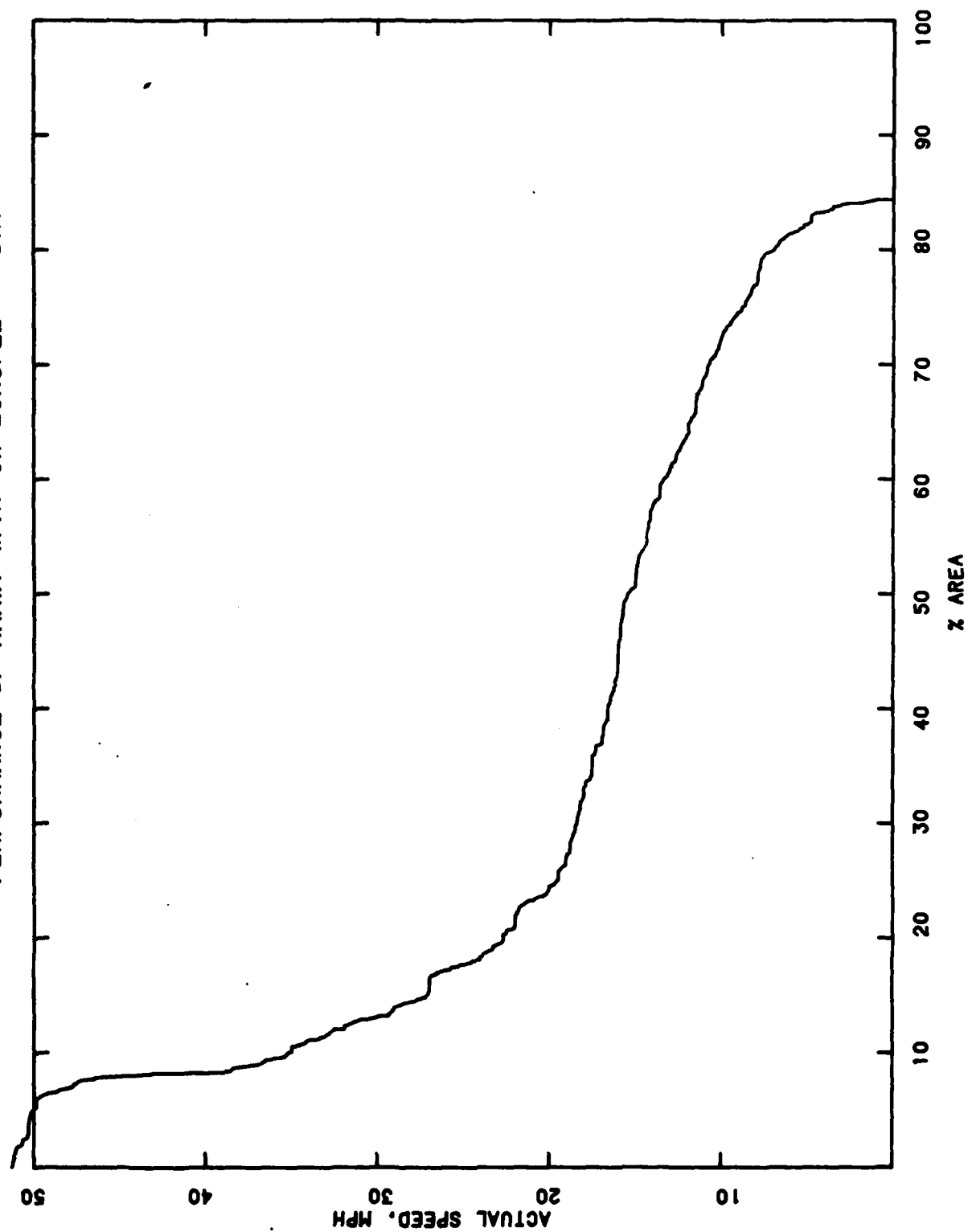
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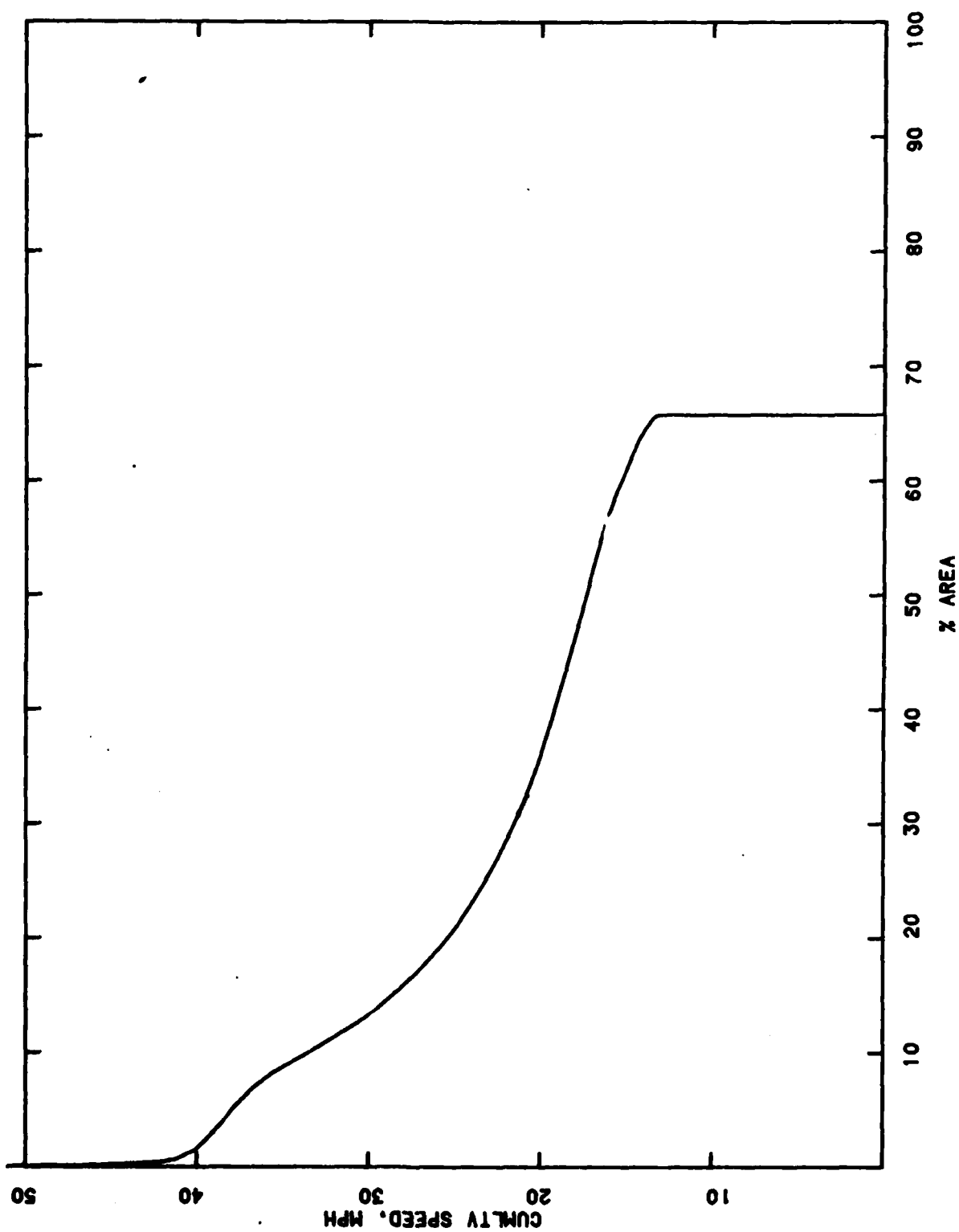
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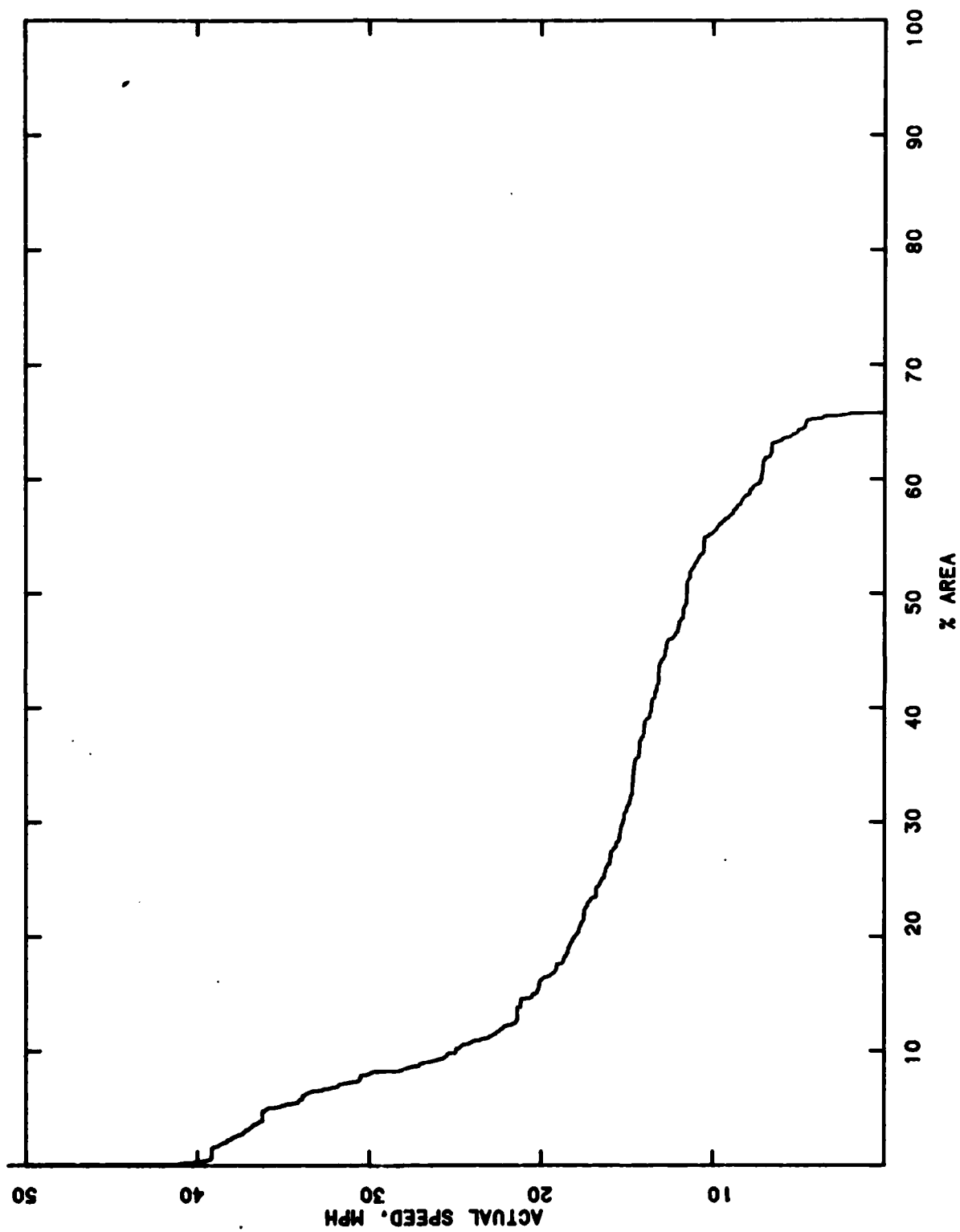
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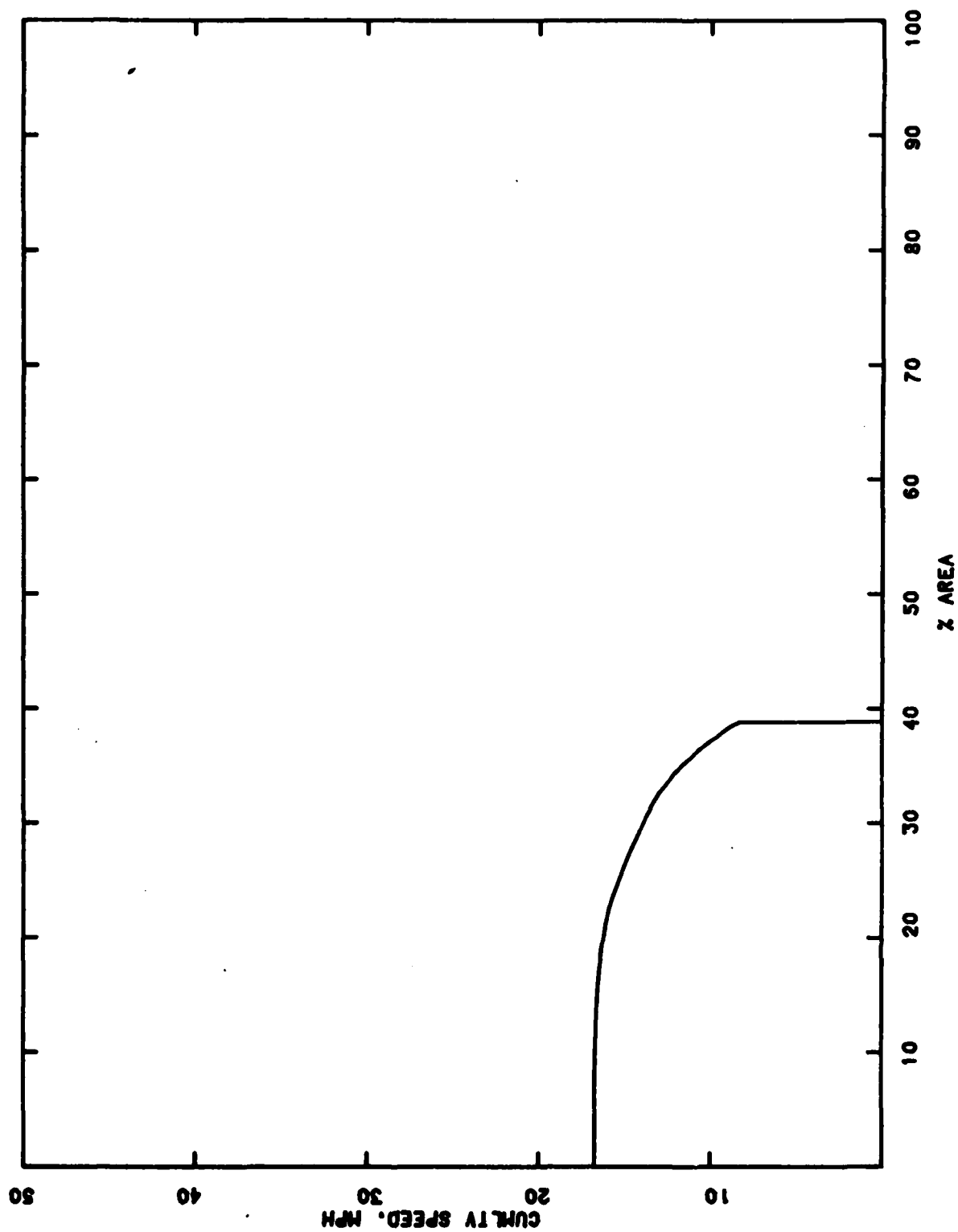
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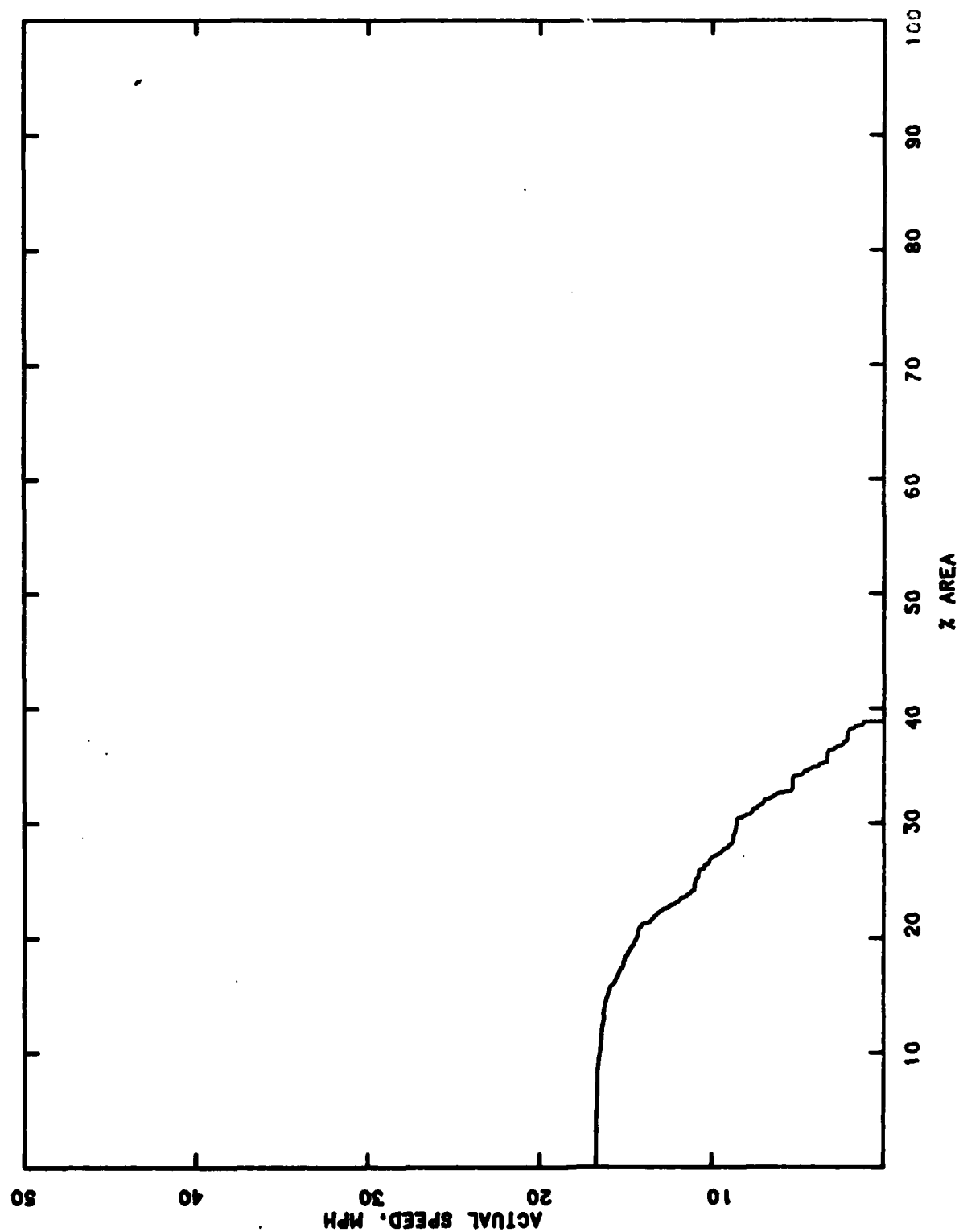
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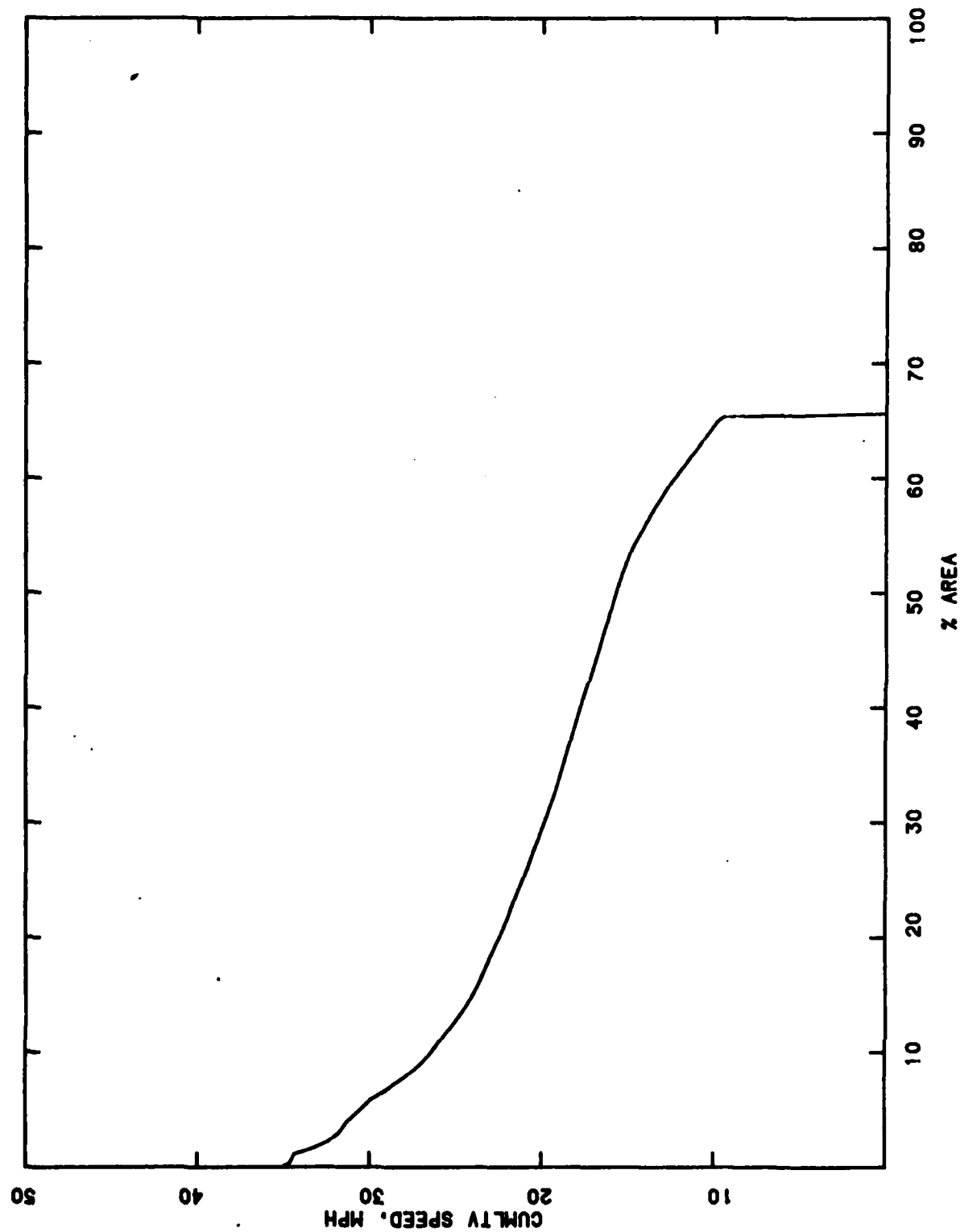
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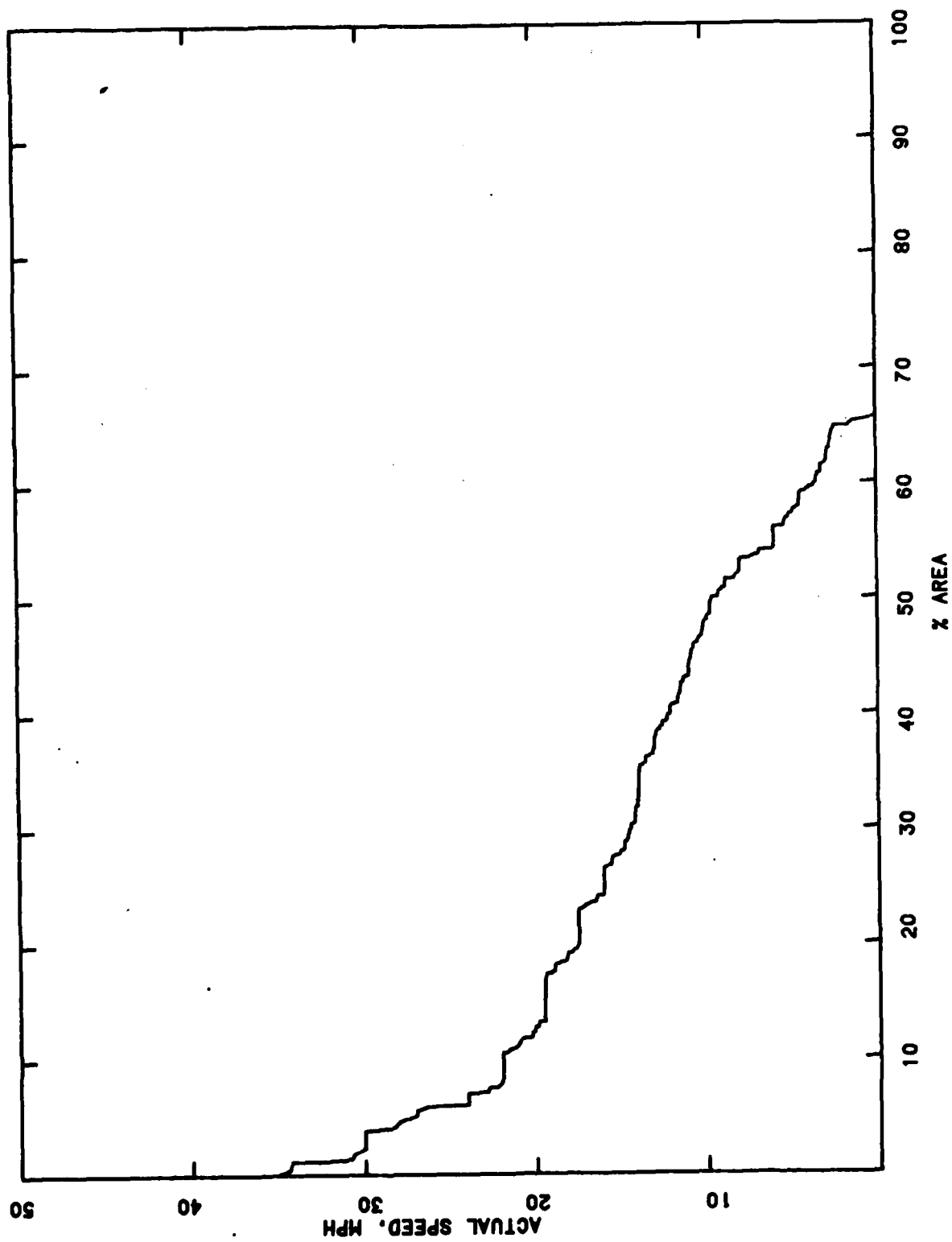
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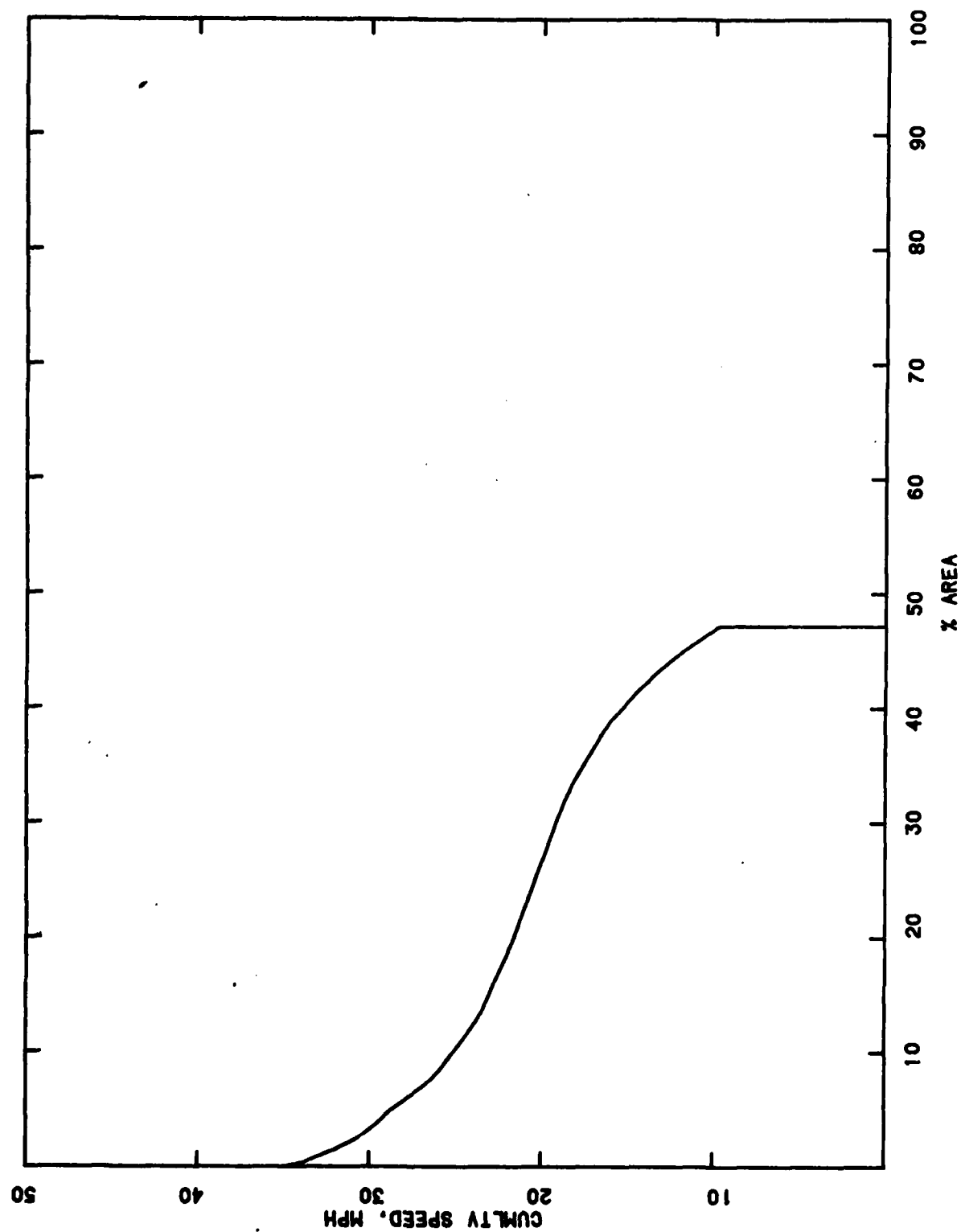
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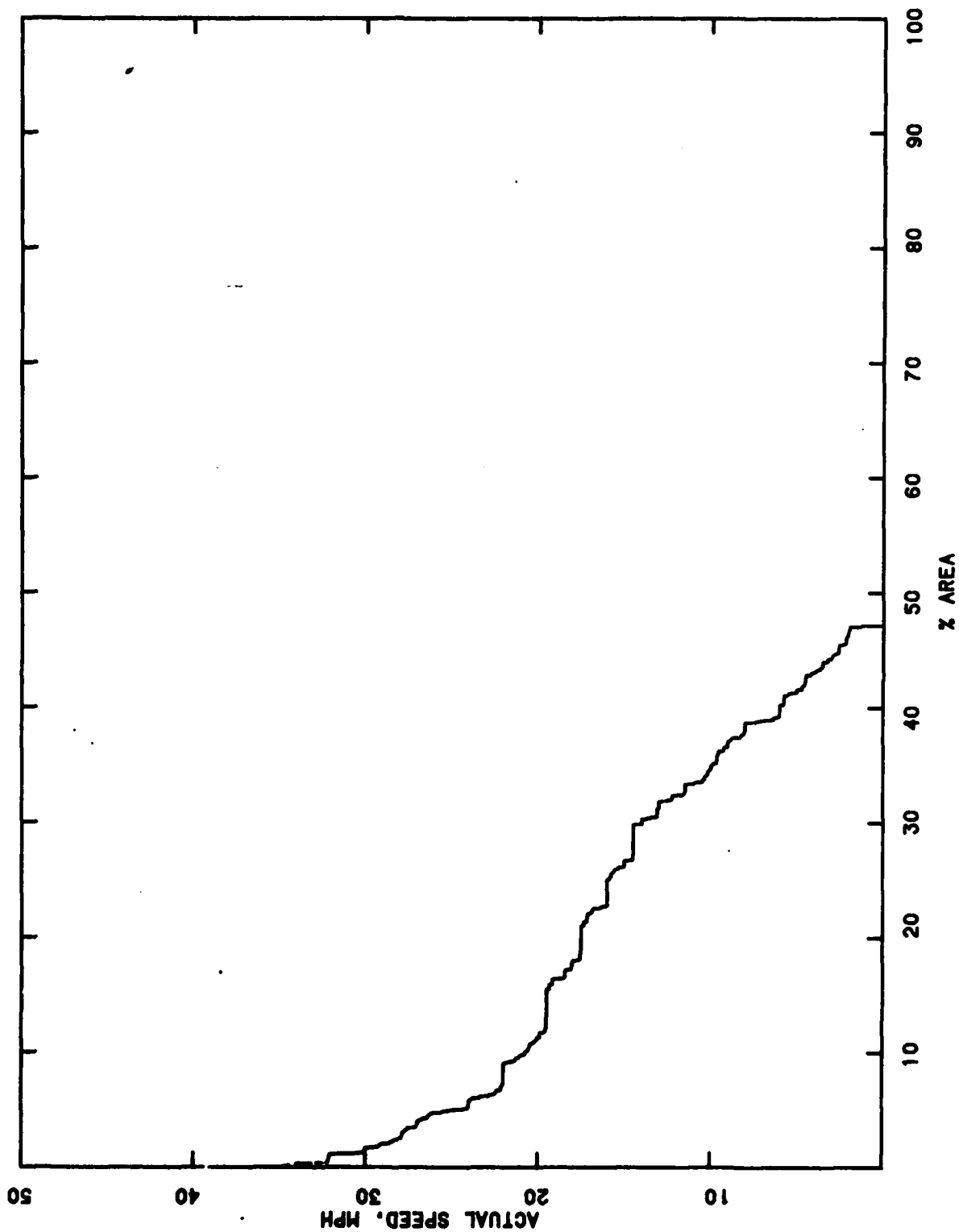
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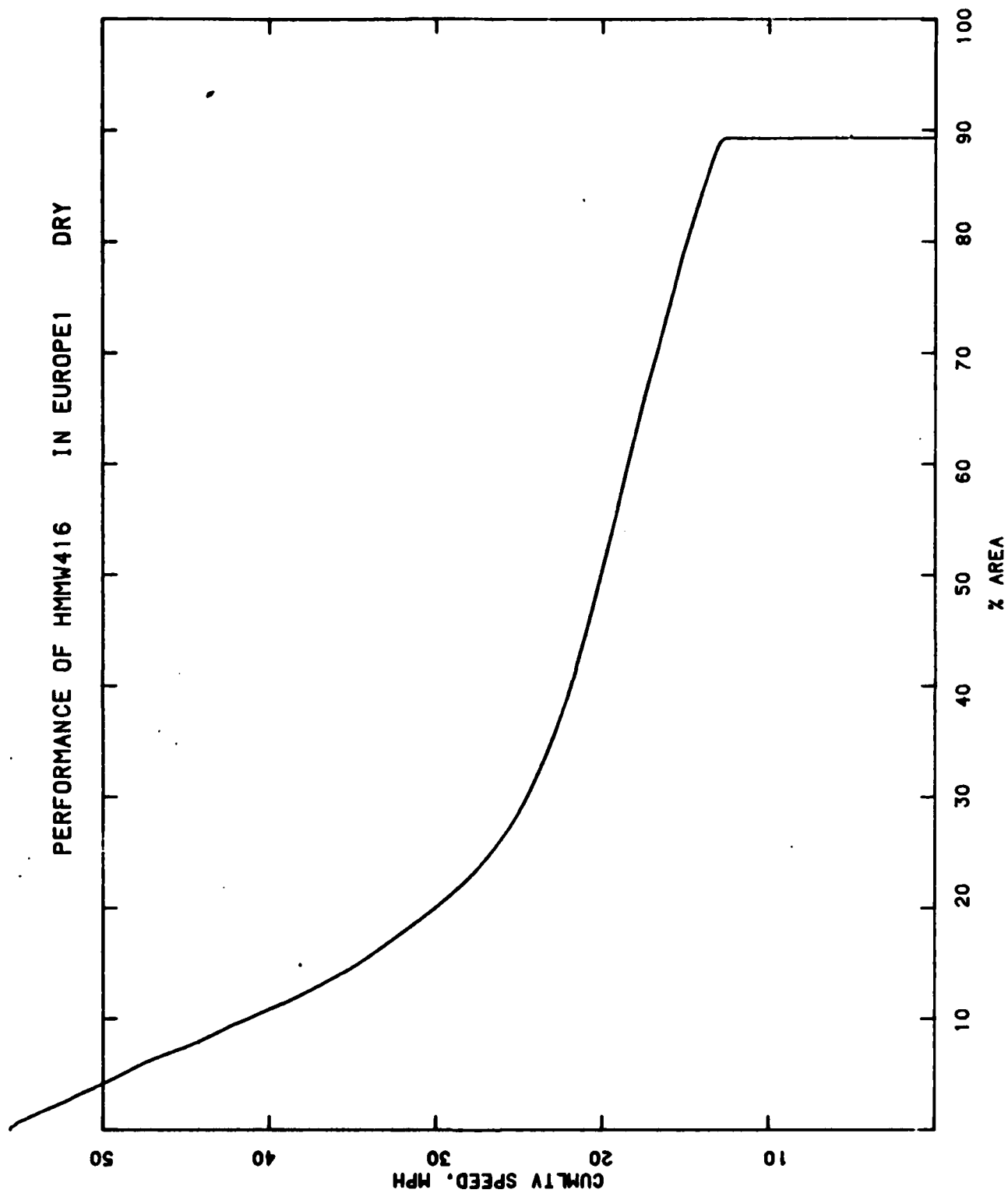
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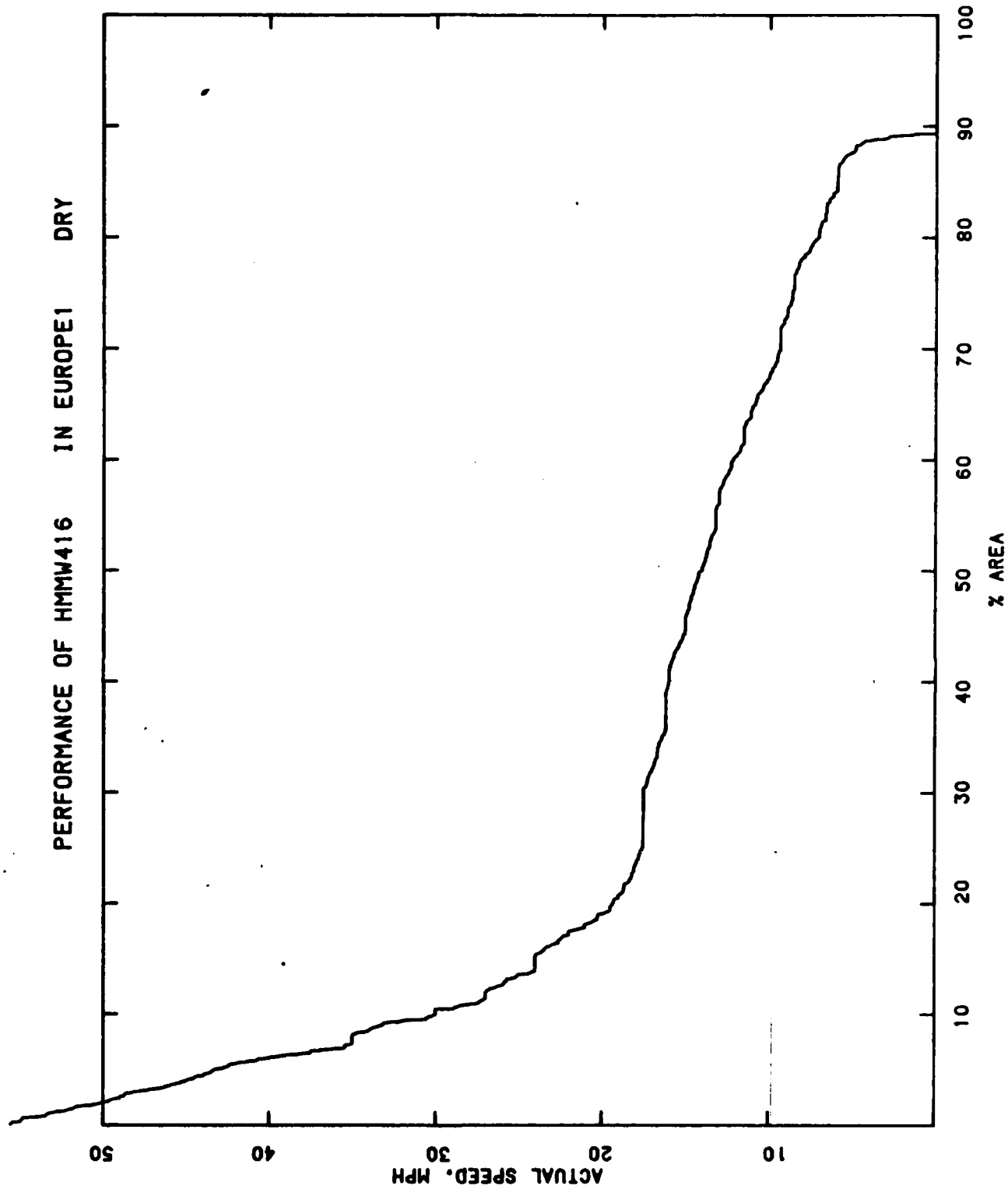
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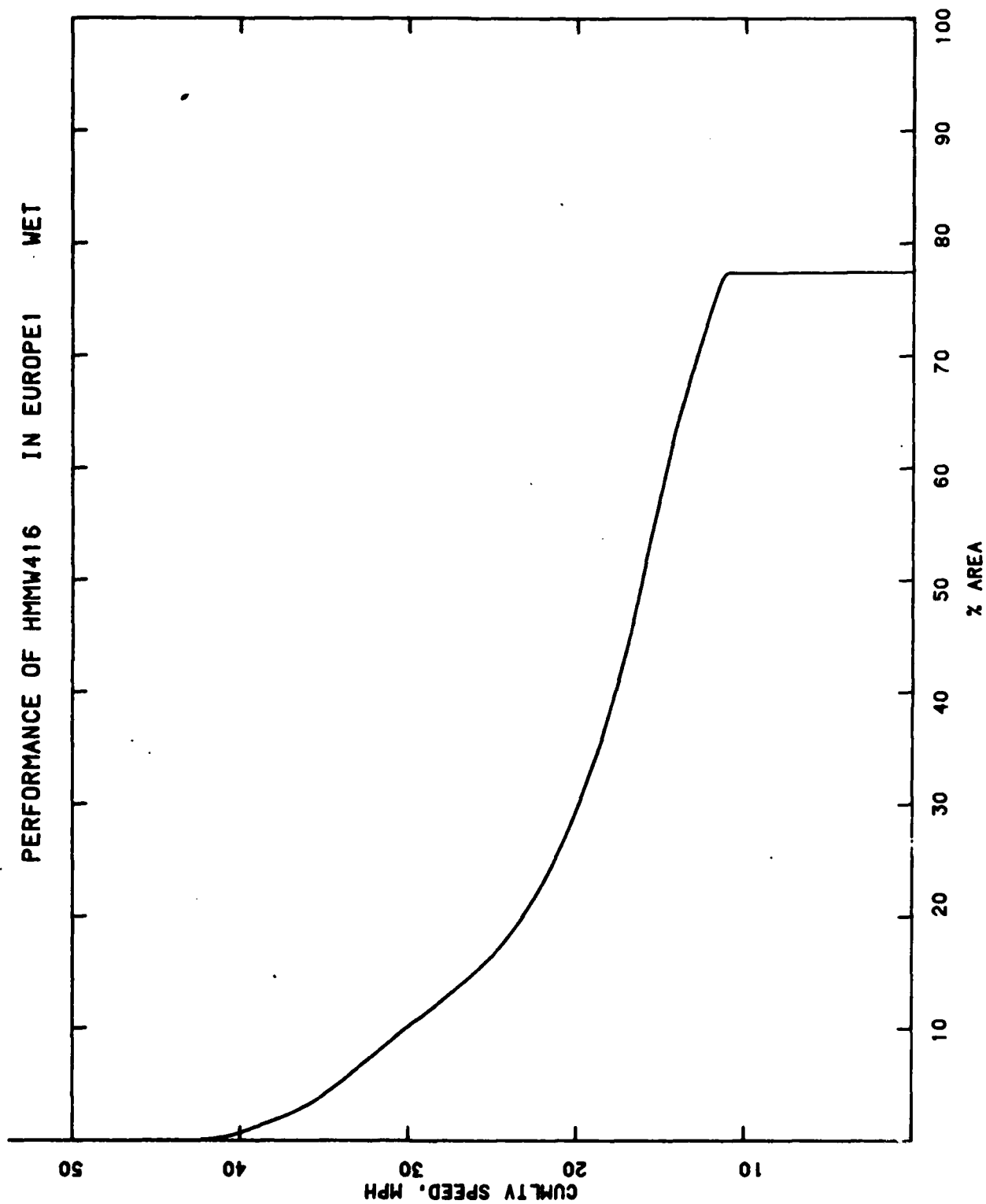
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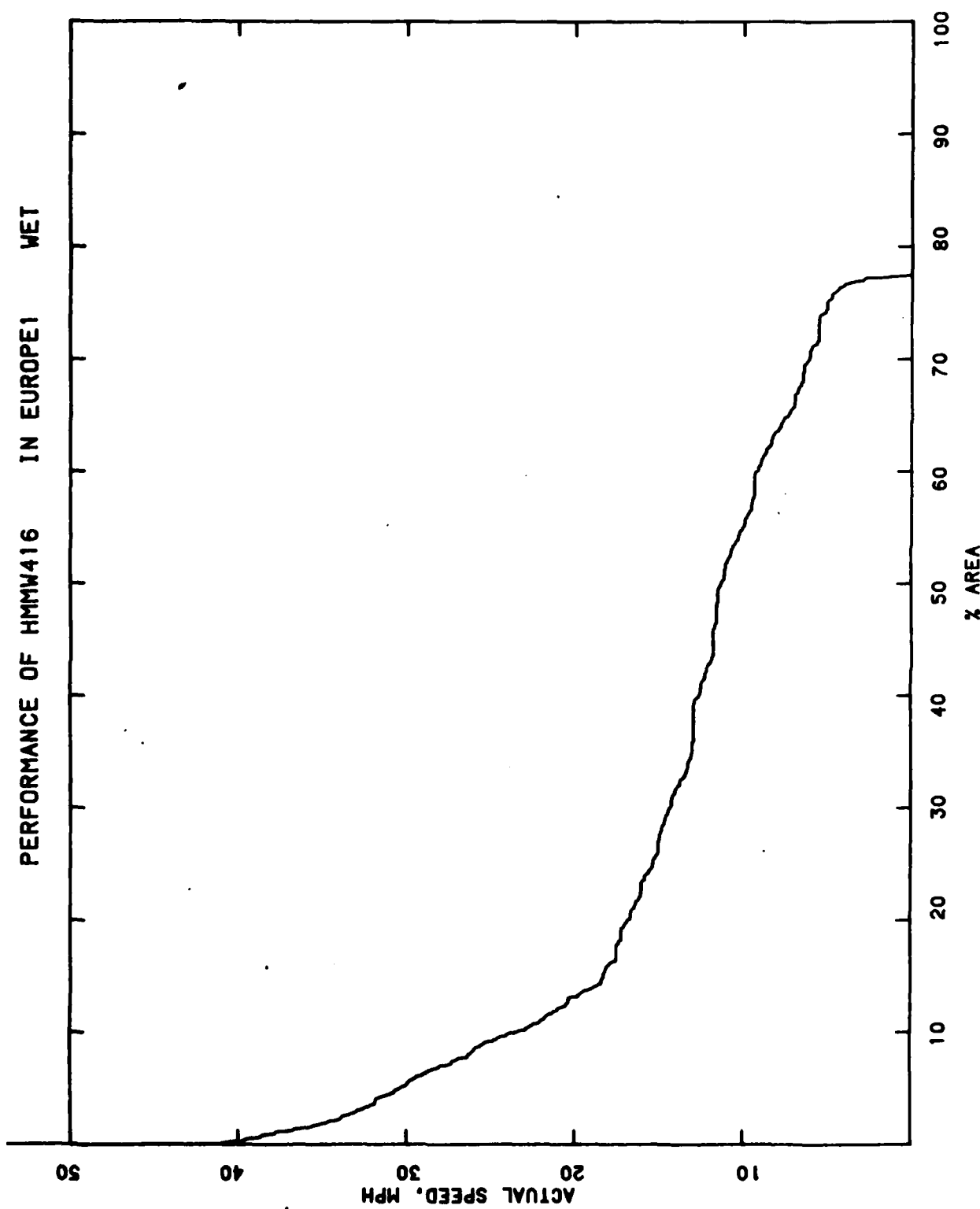


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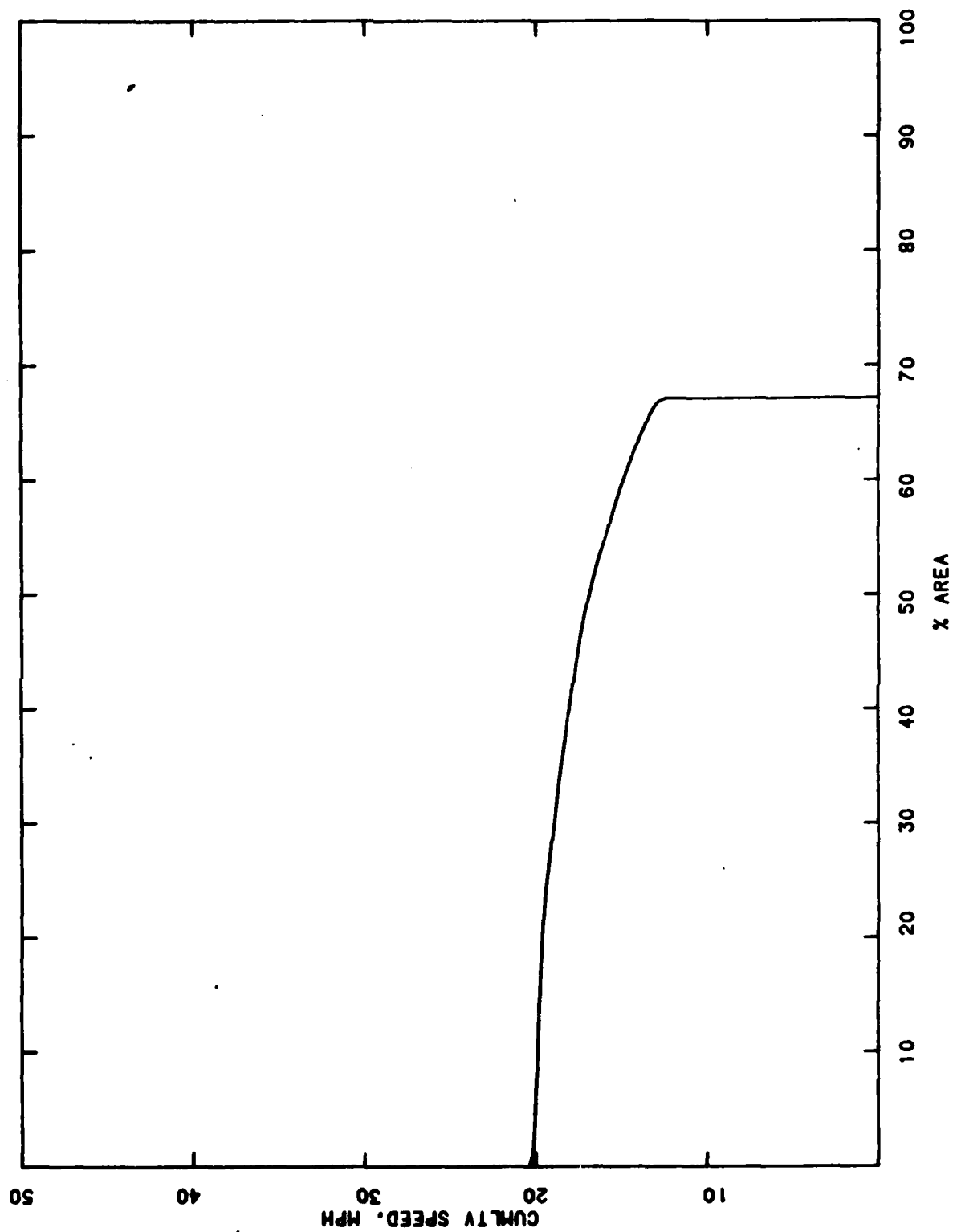


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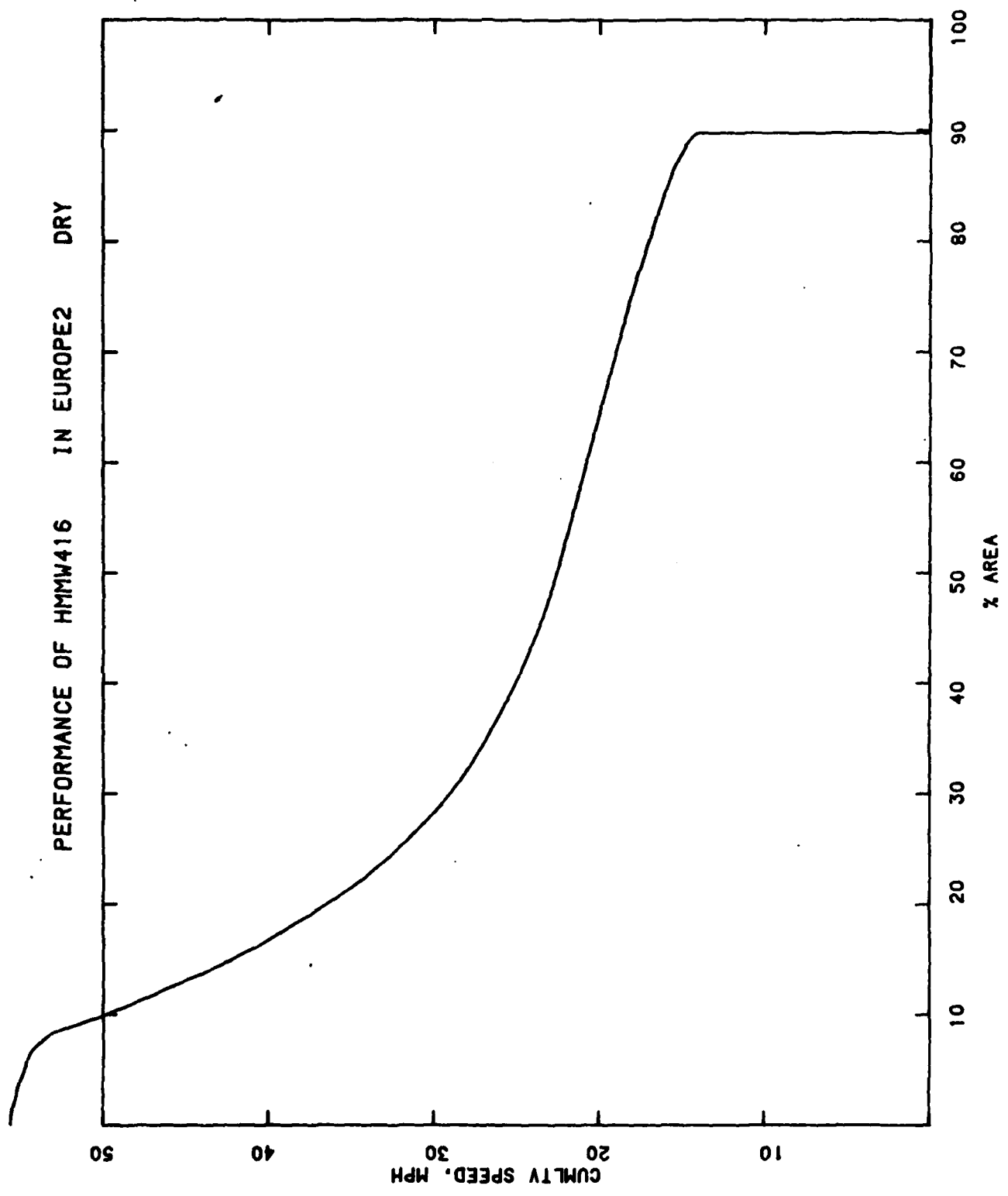




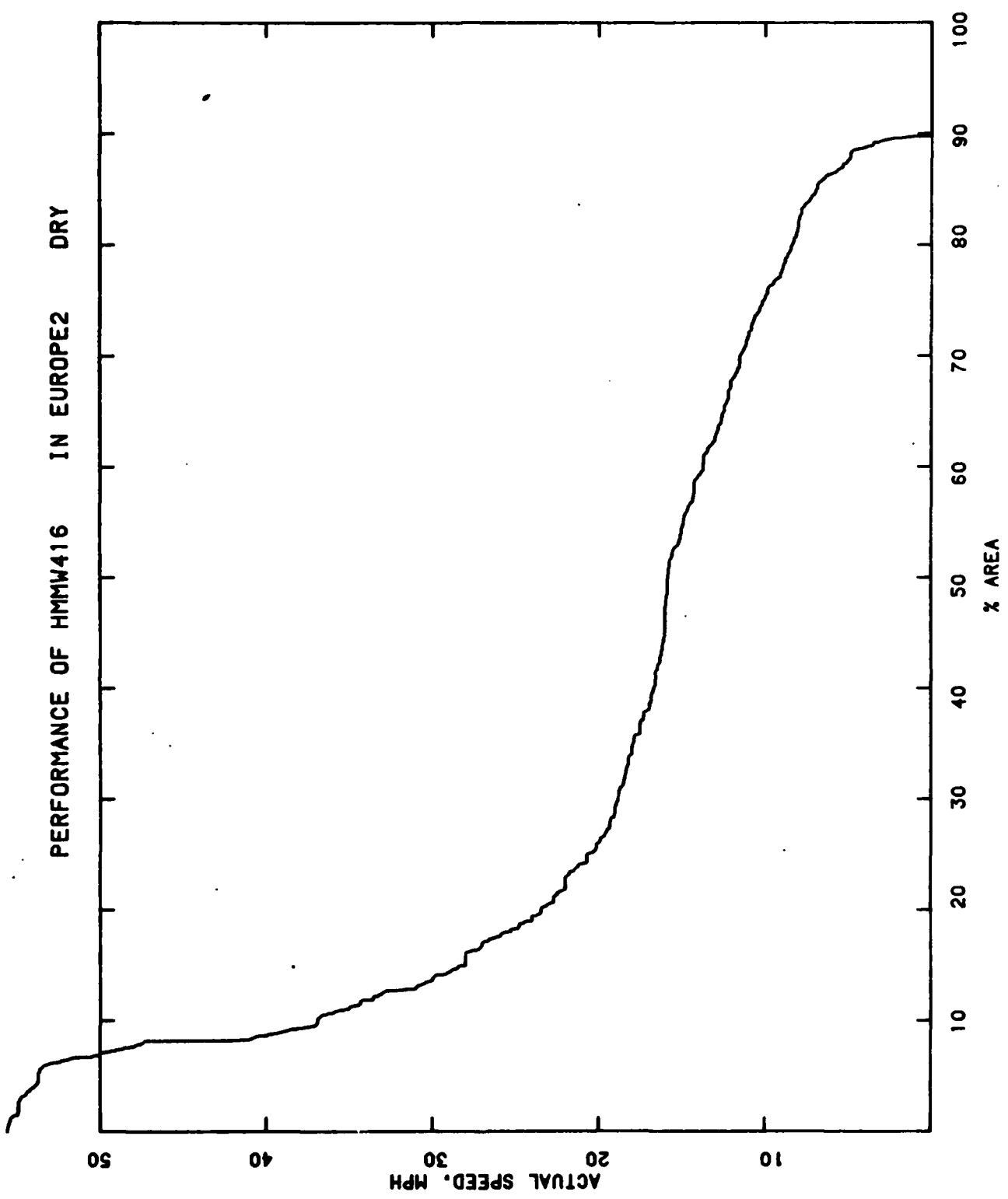
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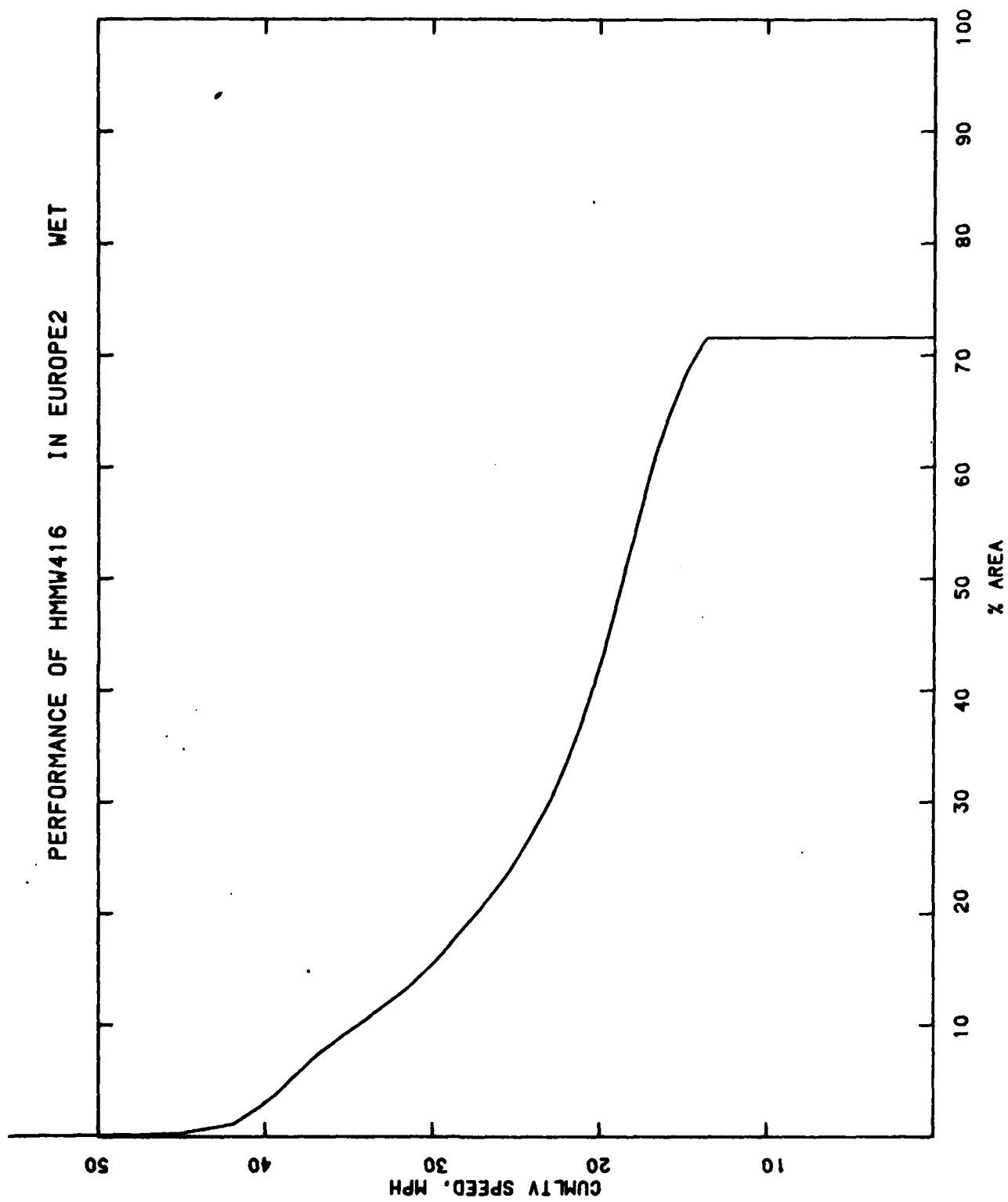
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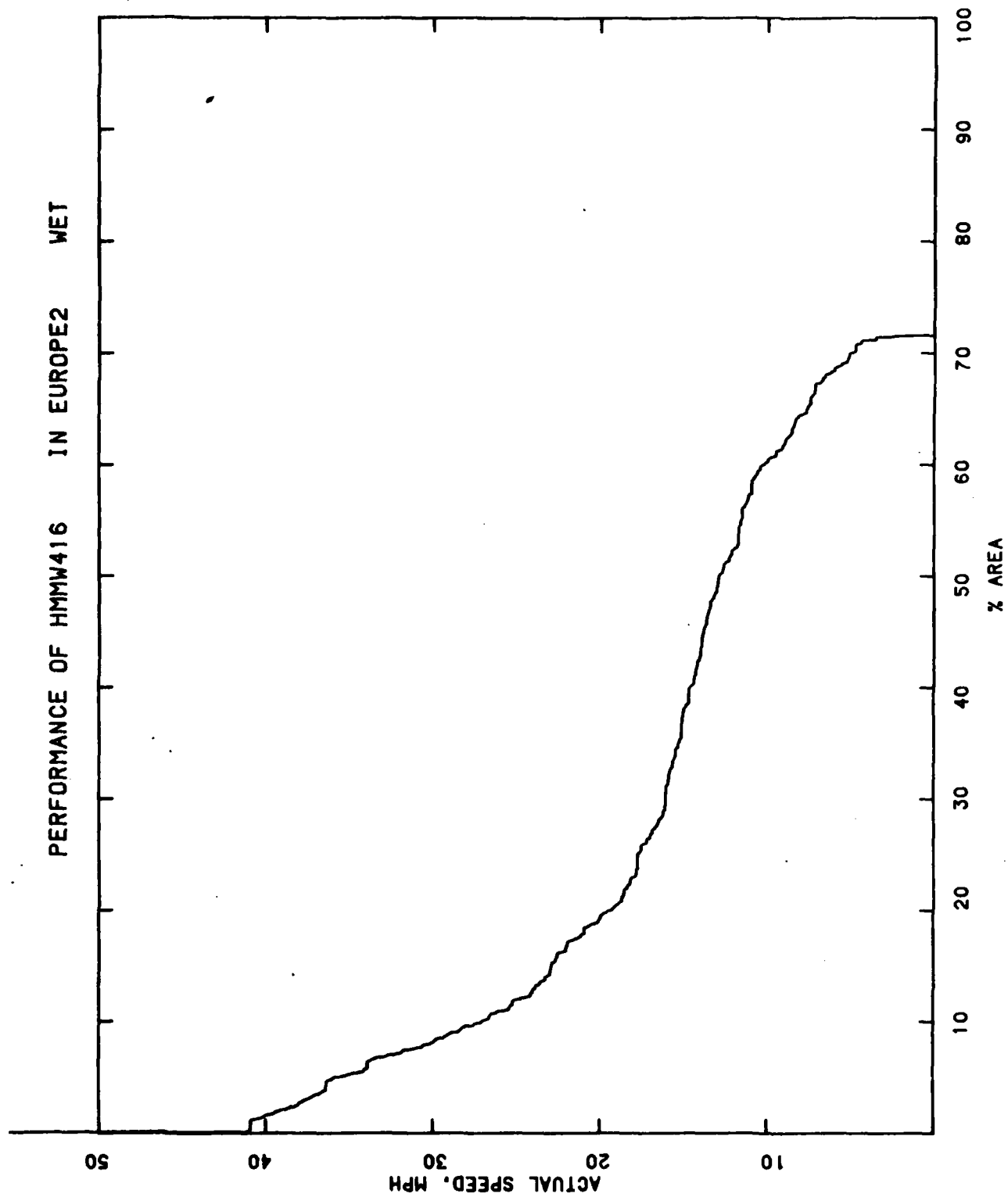


PERFORMANCE OF HMMW416 IN EUROPE2 DRY

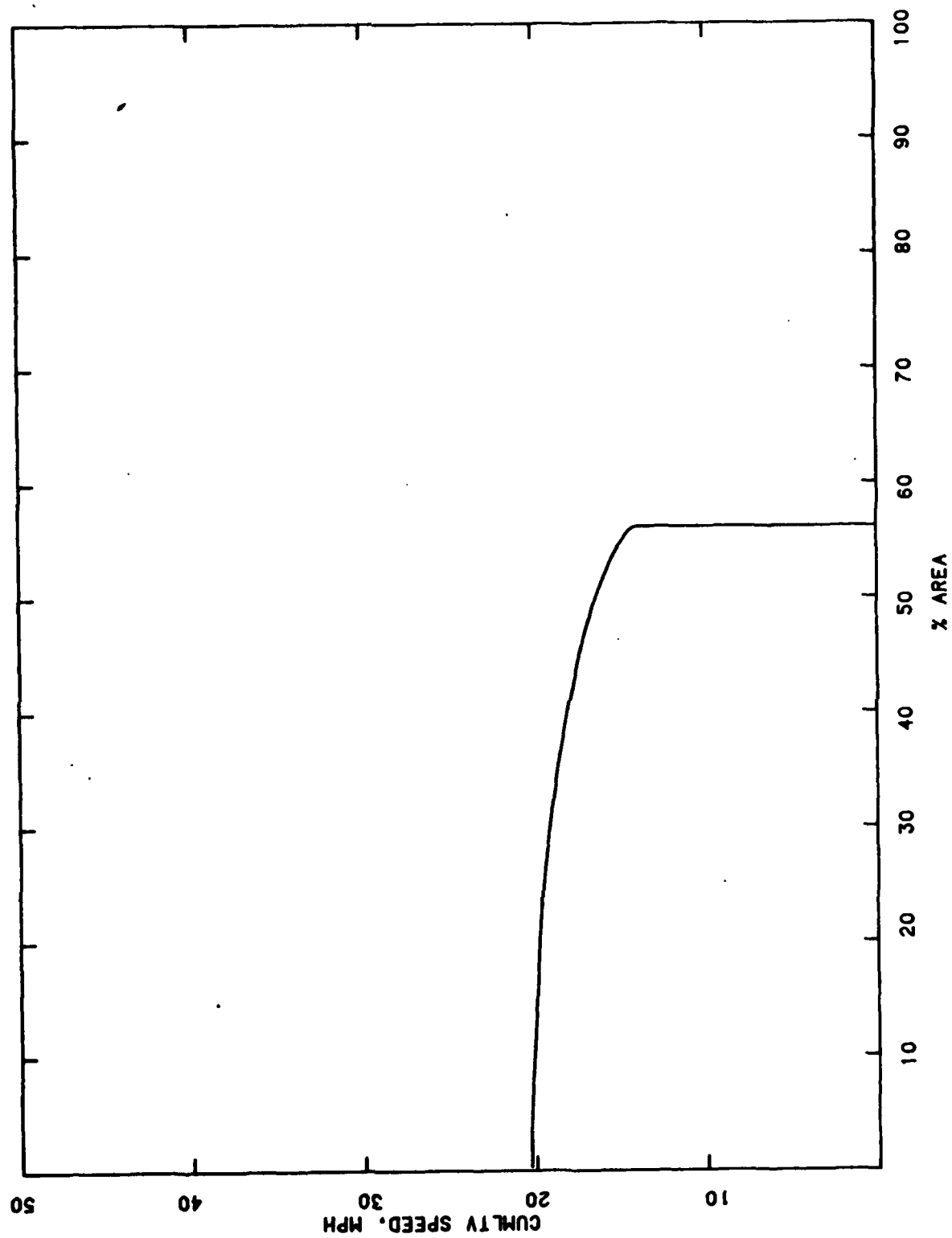


PERFORMANCE OF HMMW416 IN EUROPE2 WET

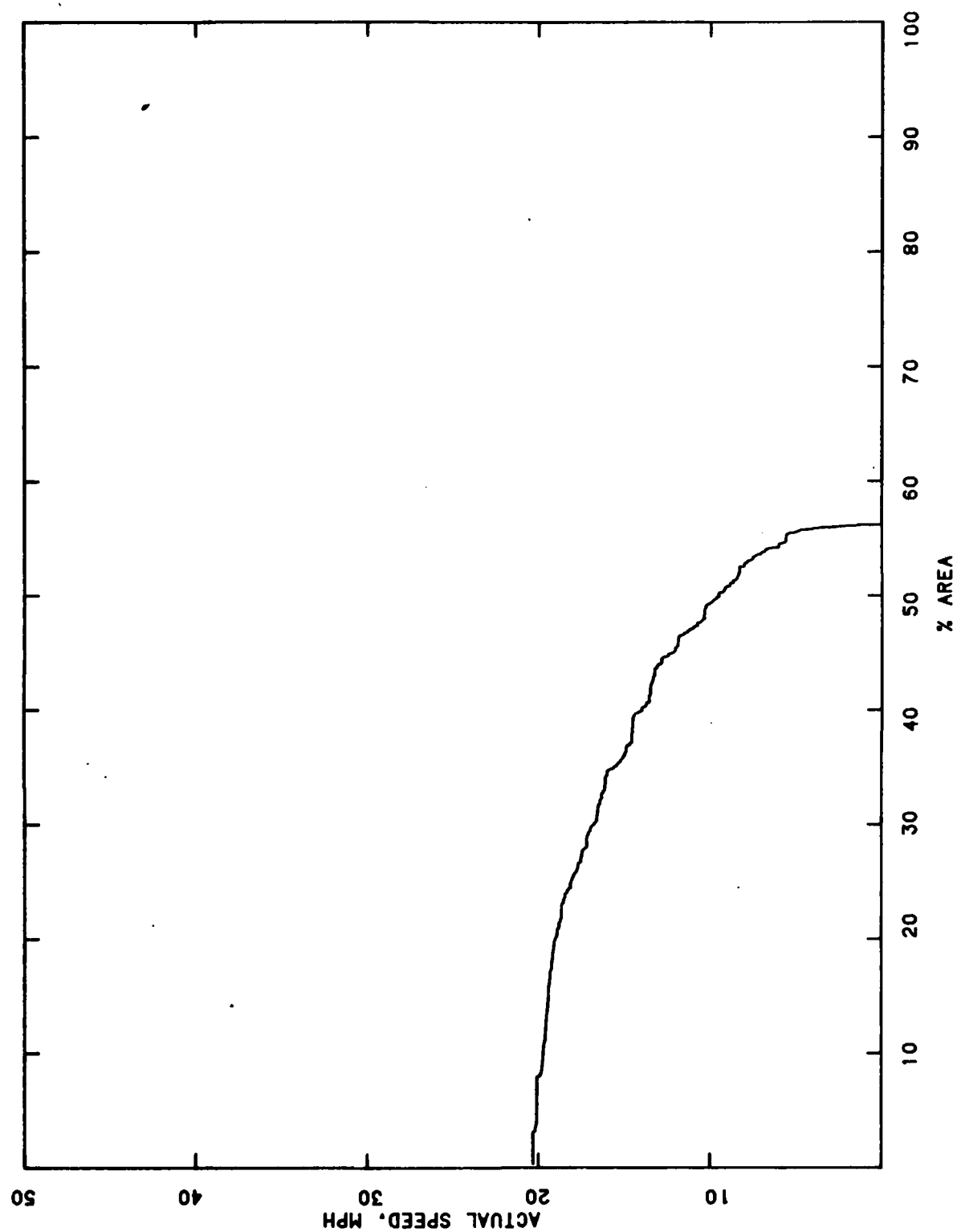




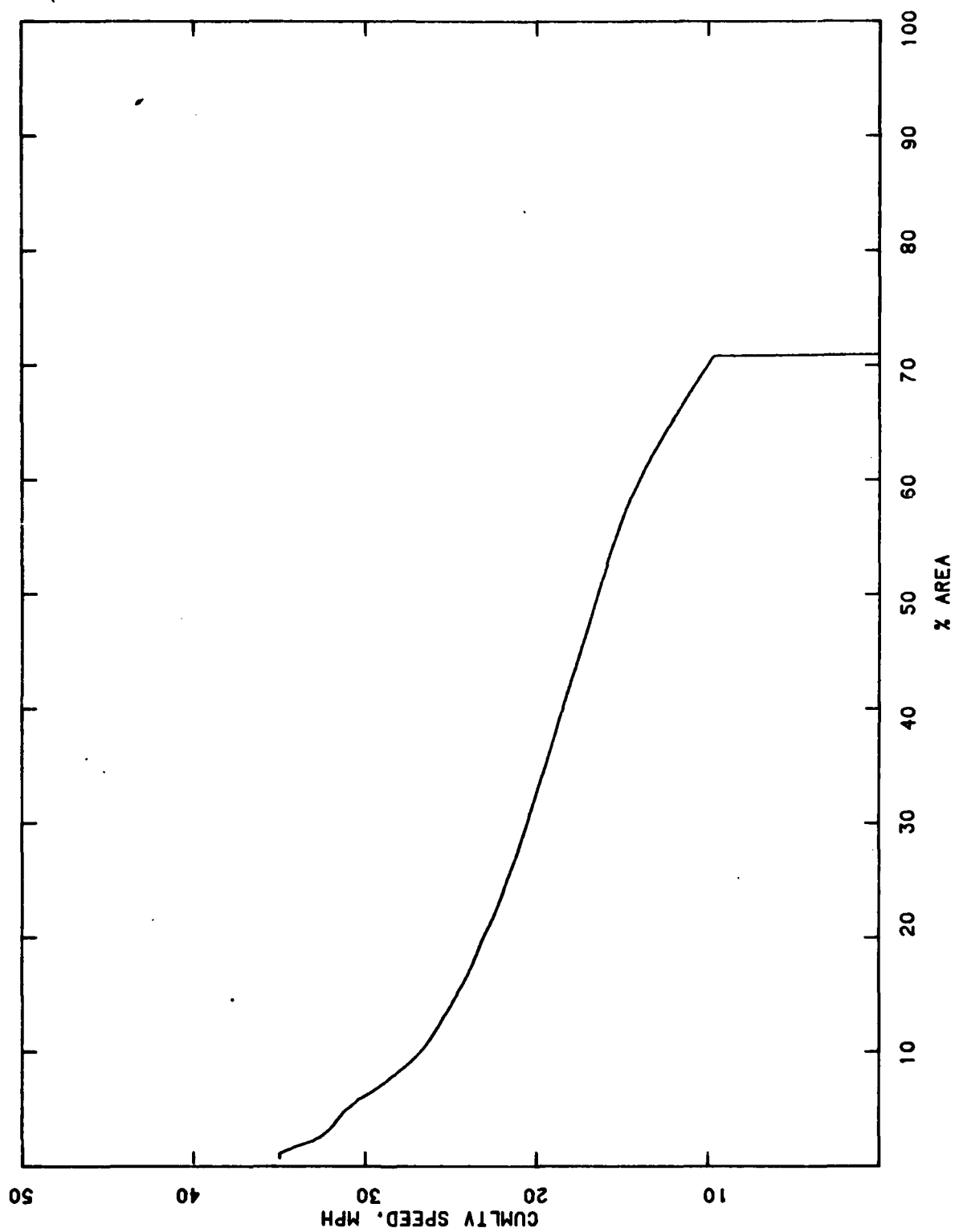
PERFORMANCE OF HMMW416 IN EUROPE2 SNOW



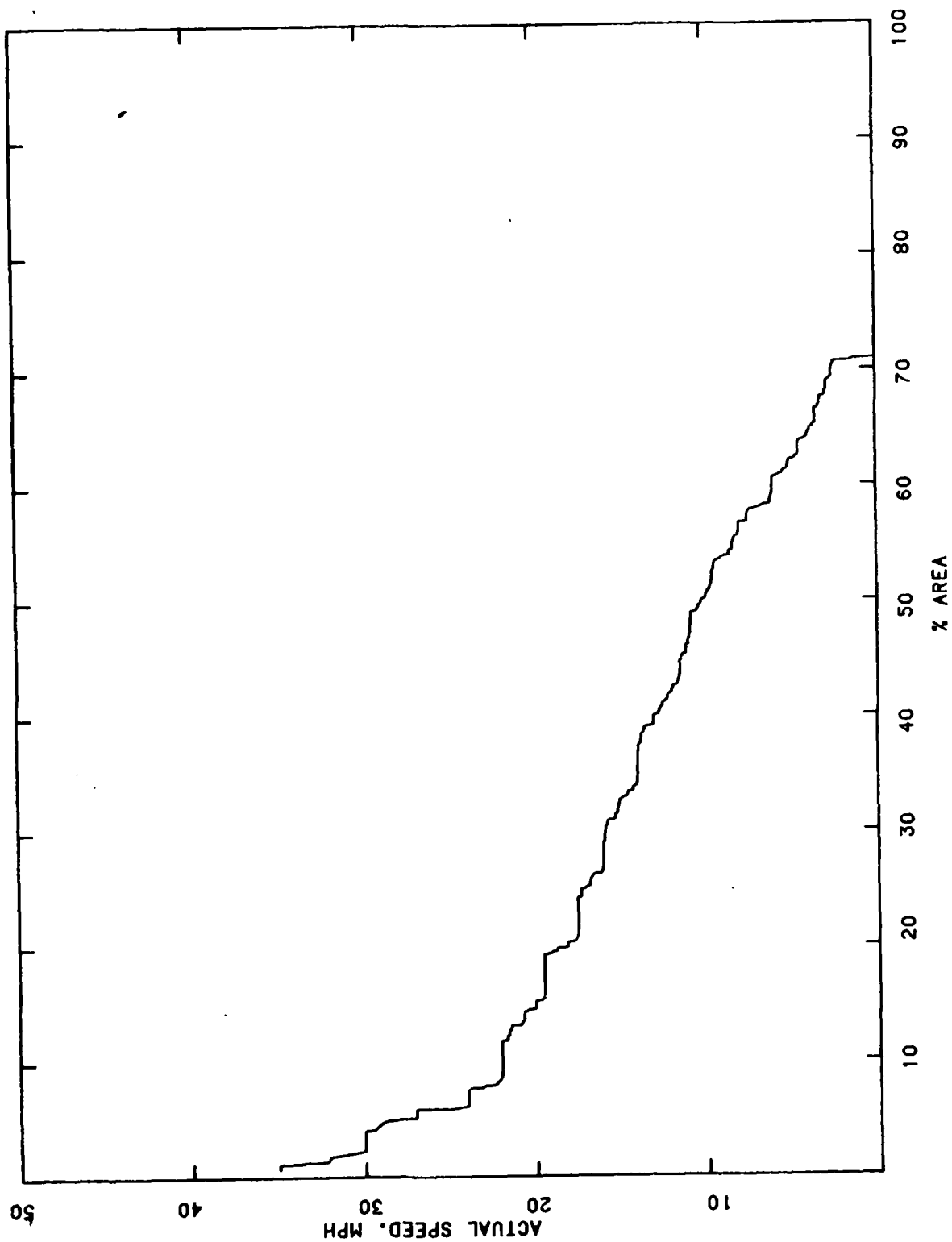
PERFORMANCE OF HMMW416 IN EUROPE2 SNOW



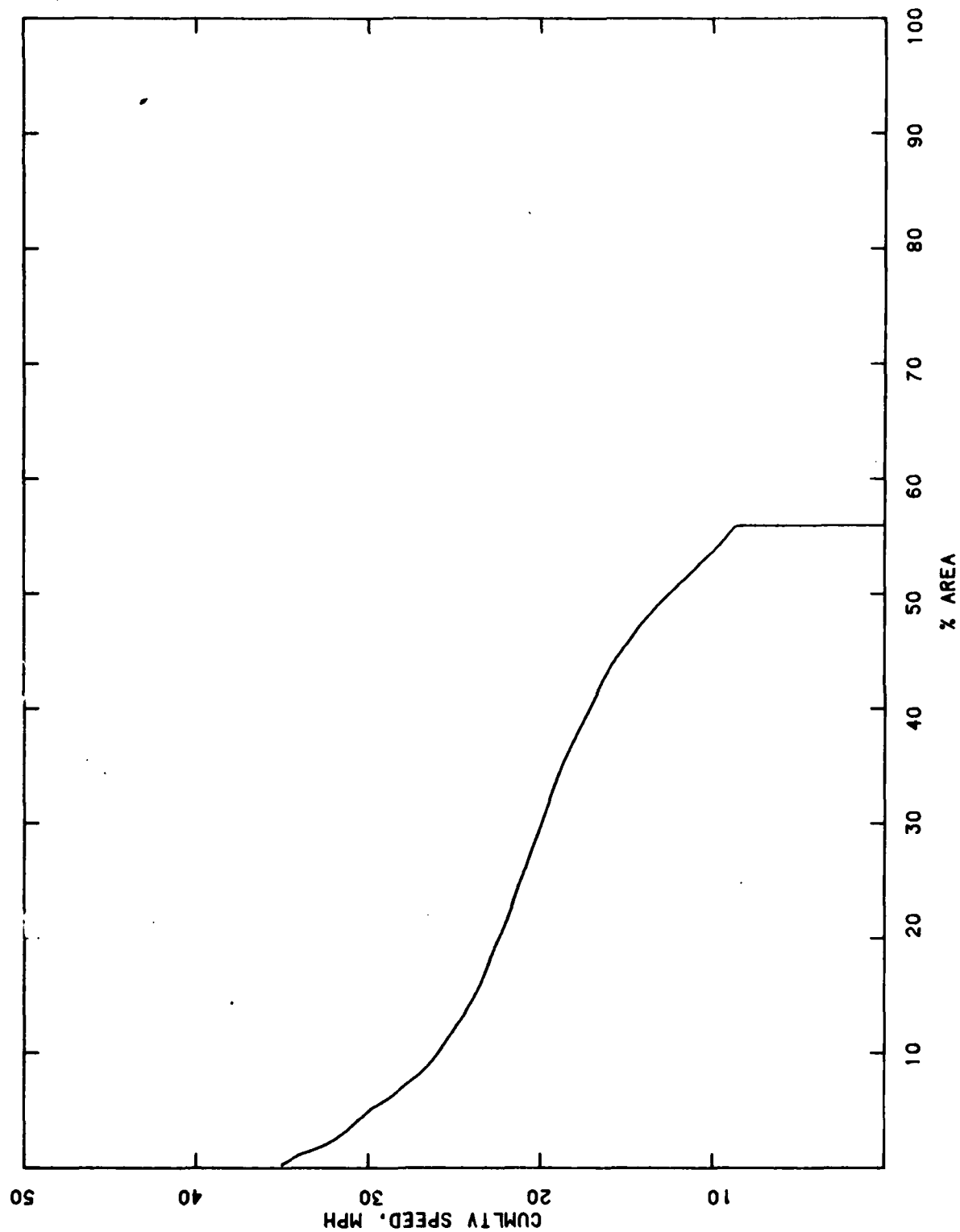
PERFORMANCE OF HMMW416 IN MIDEAST1 DRY



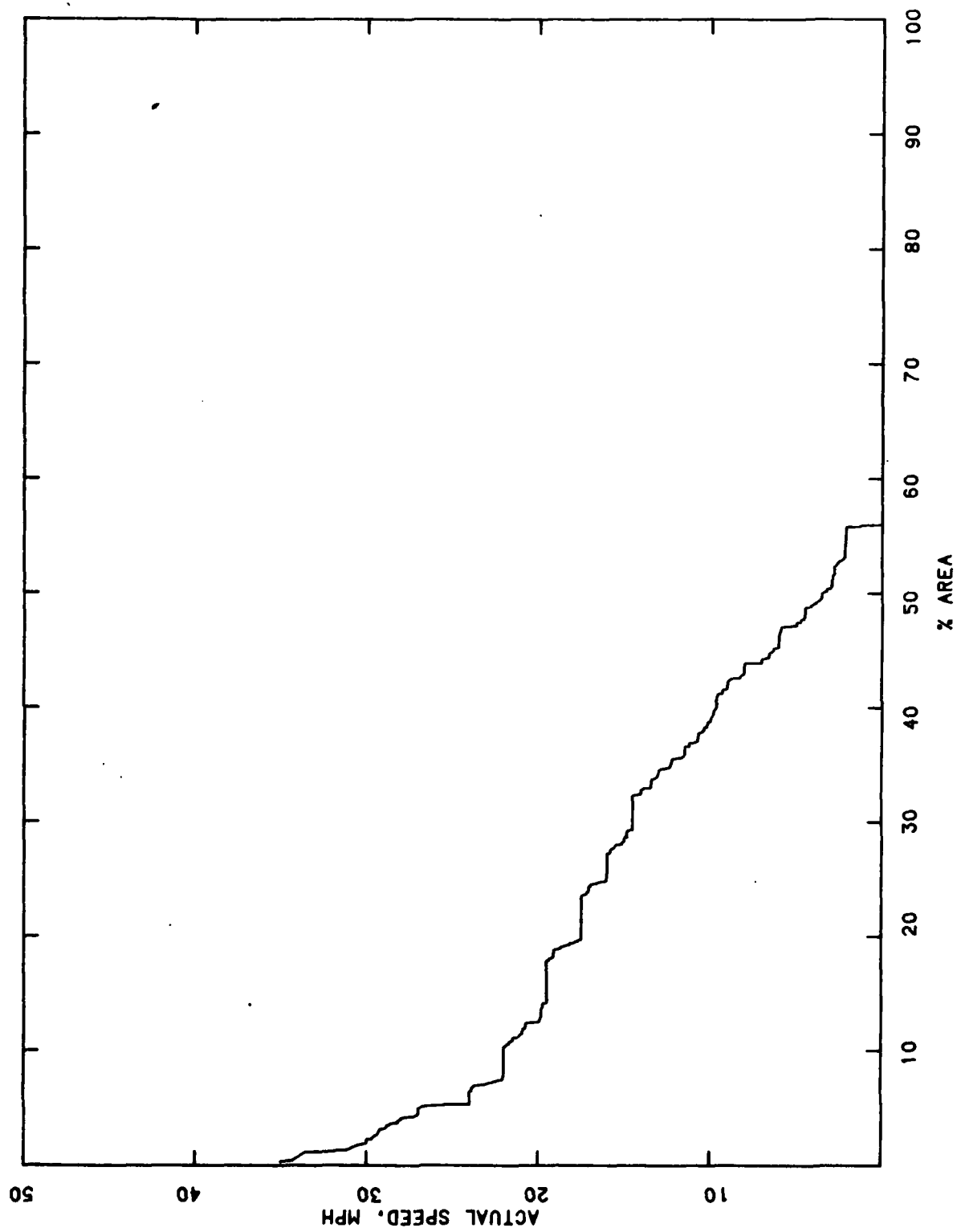
PERFORMANCE OF HMMW416 IN MIDEAST1 DRY



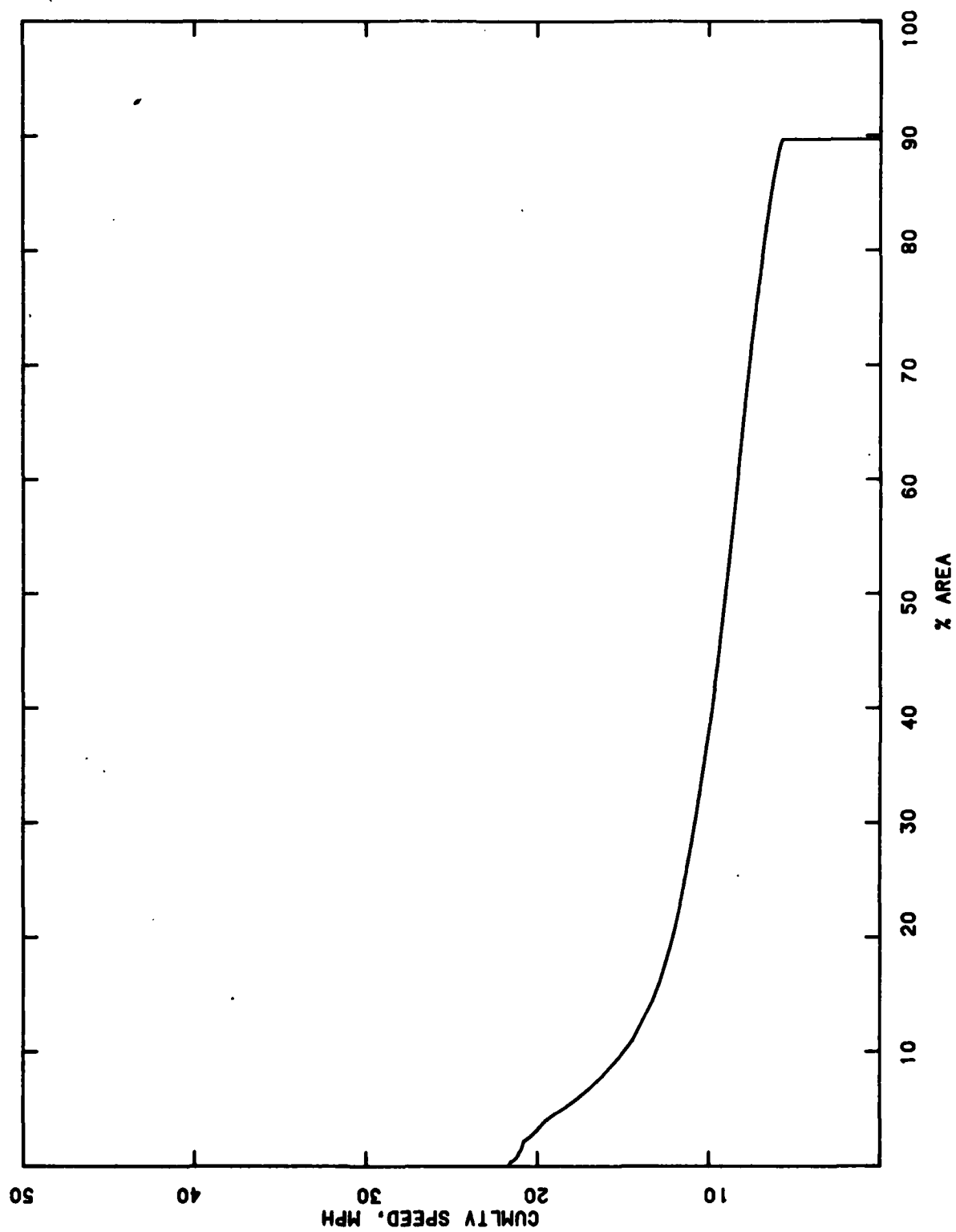
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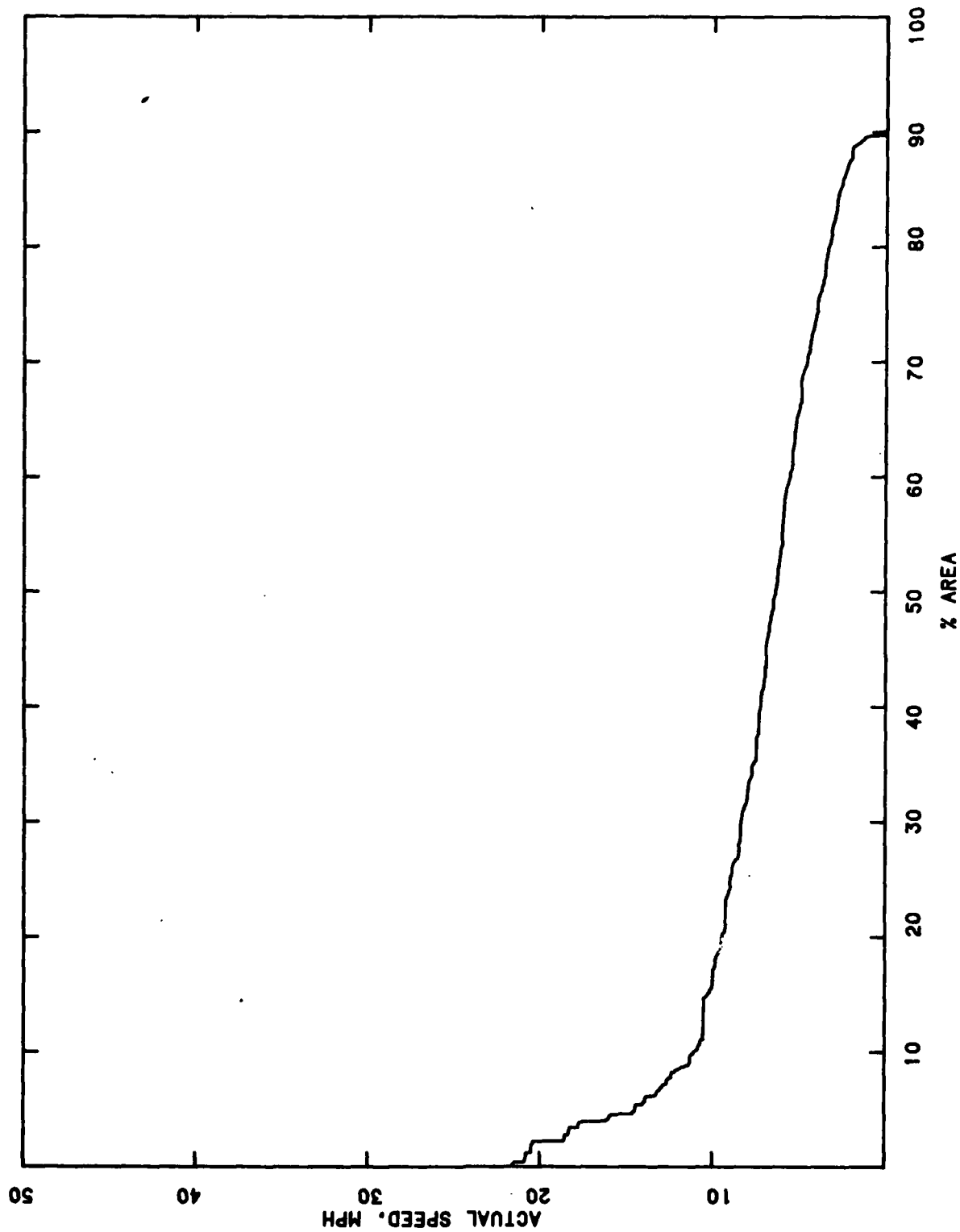
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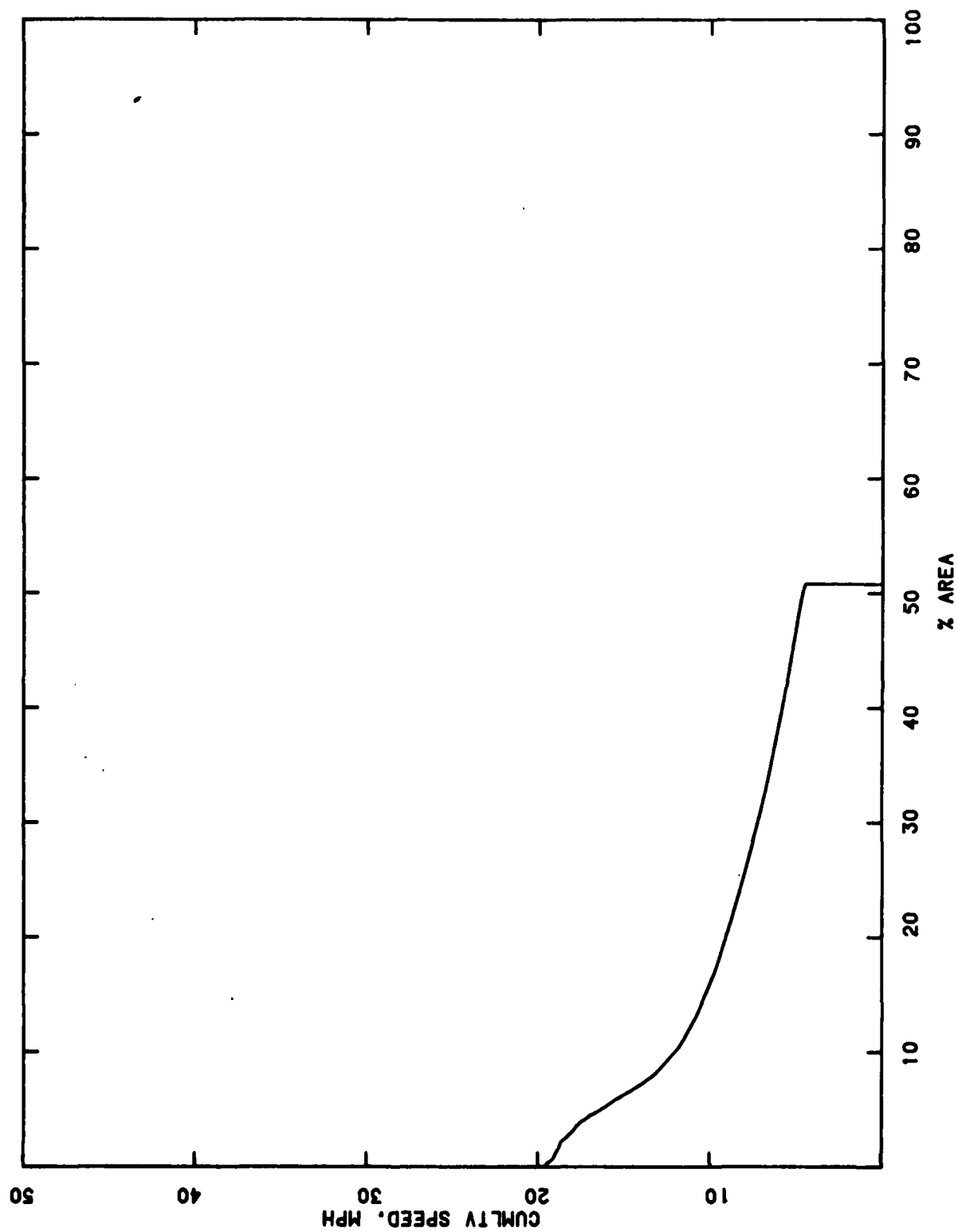
PERFORMANCE OF M559 IN EUROPE1 DRY



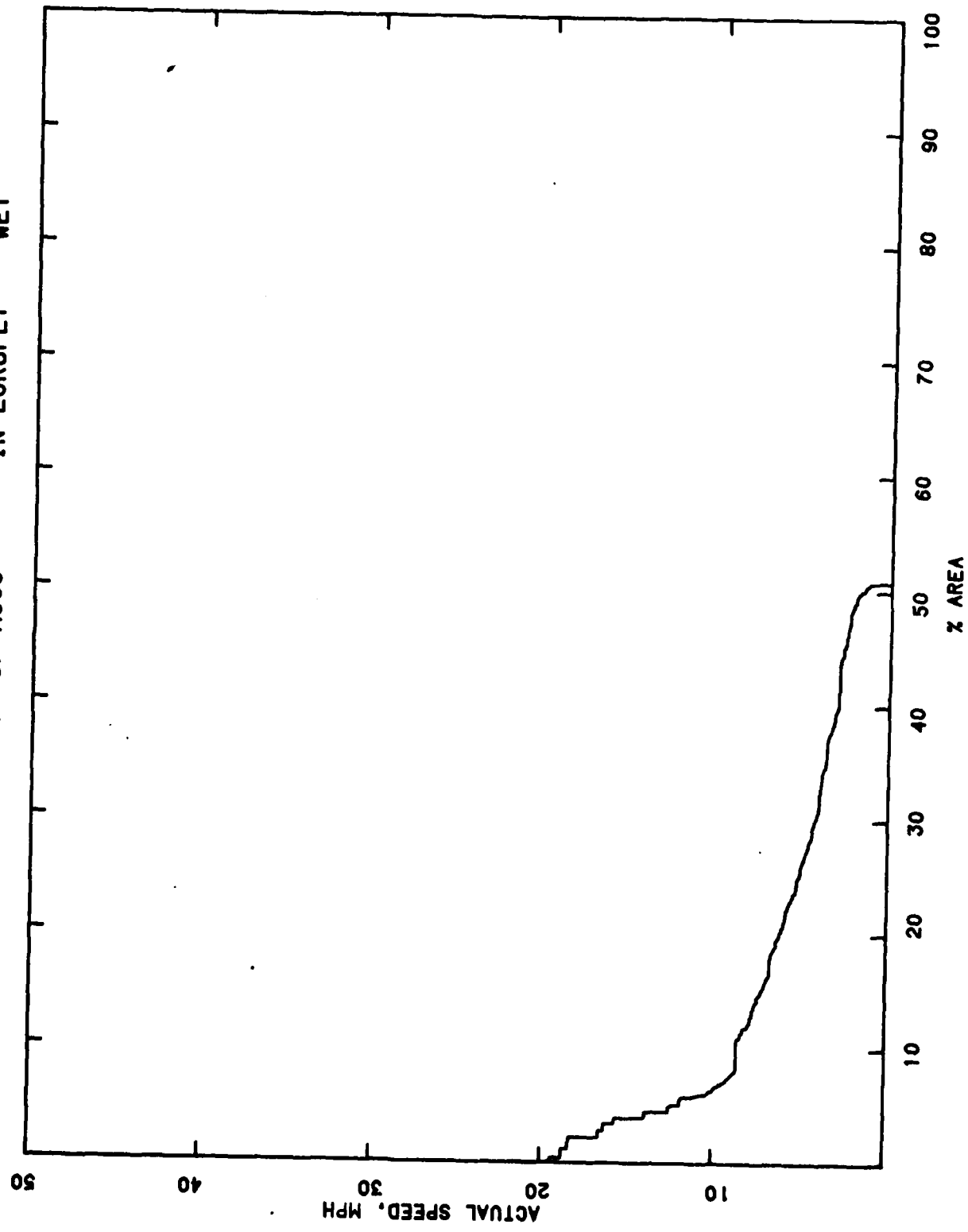
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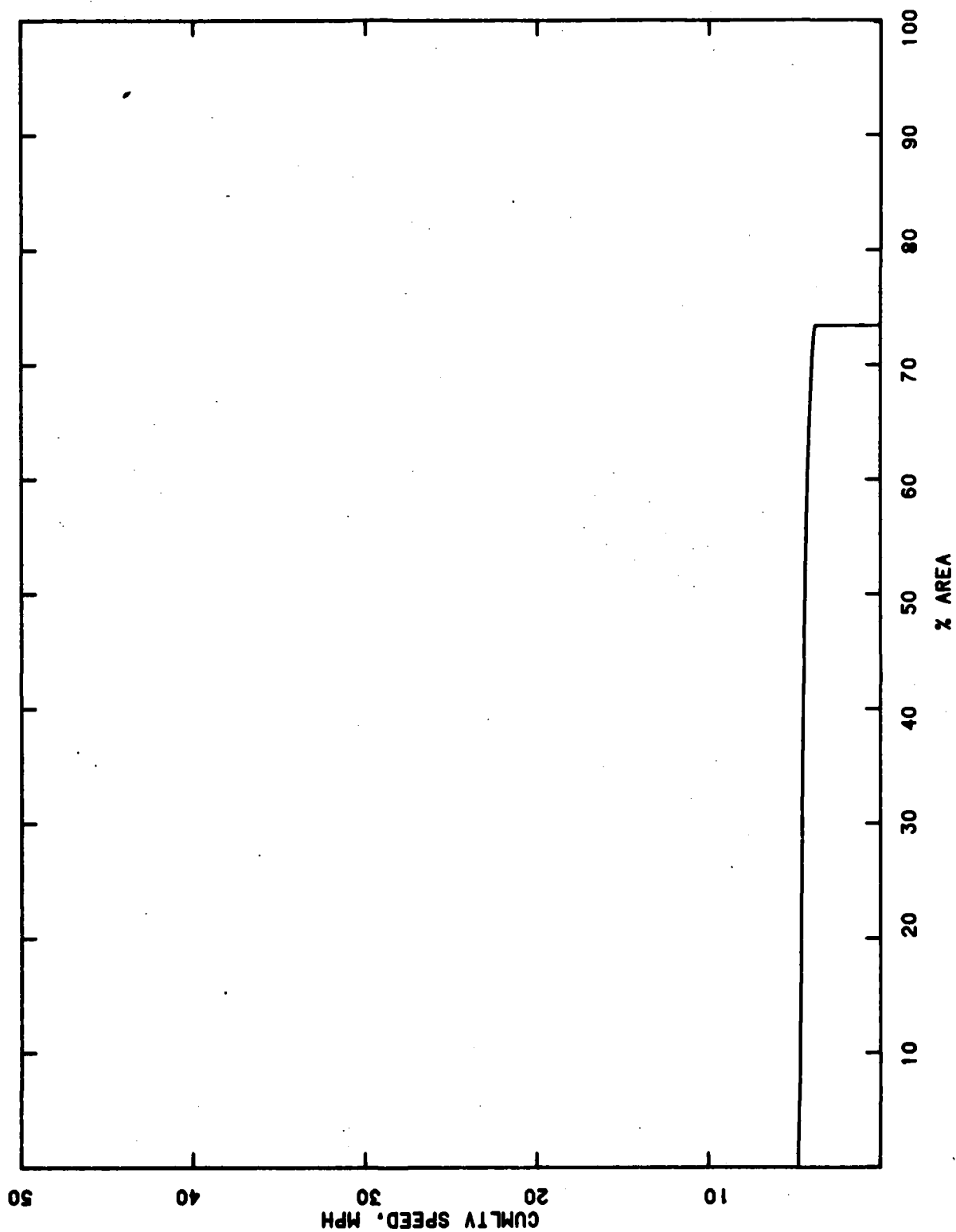
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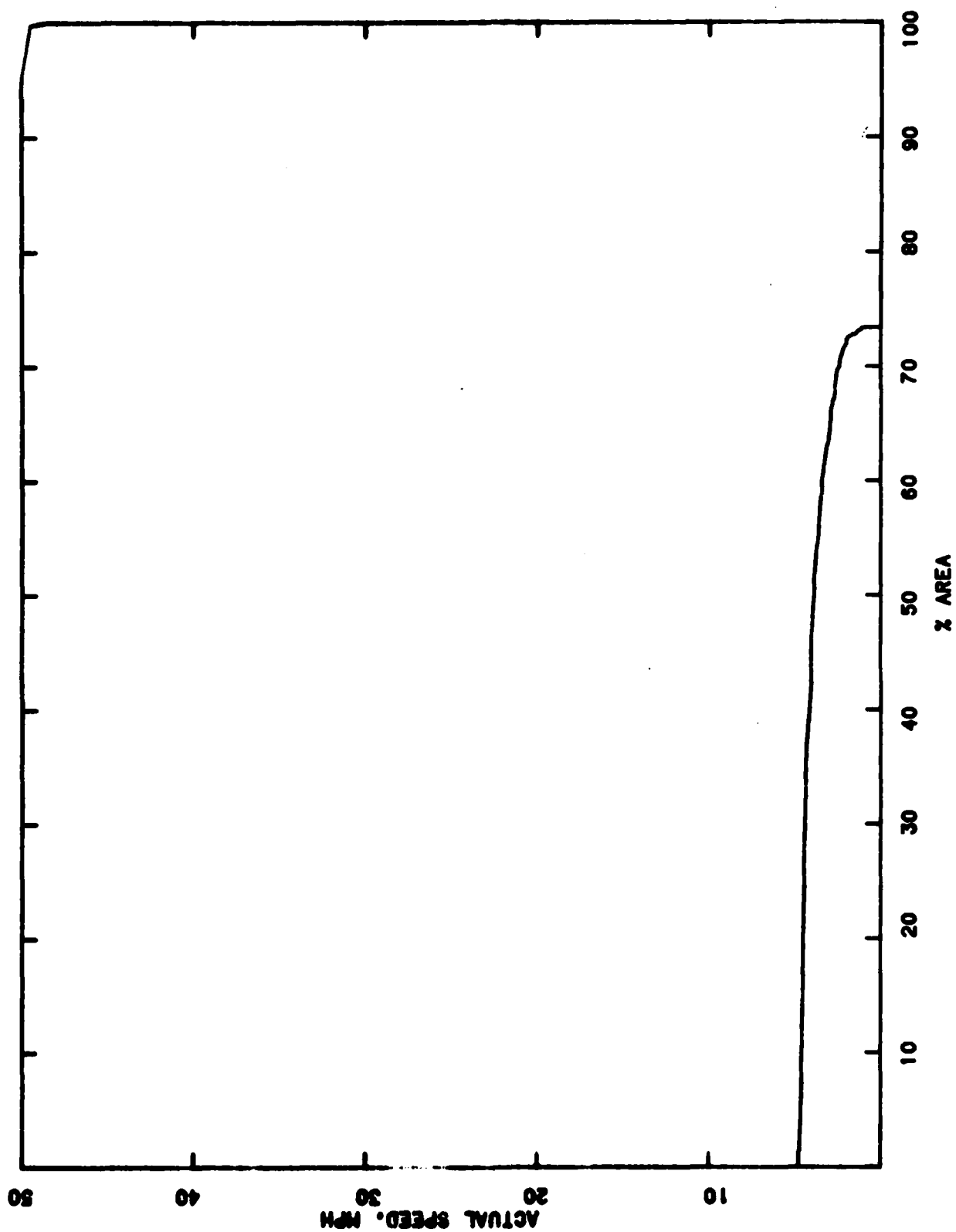
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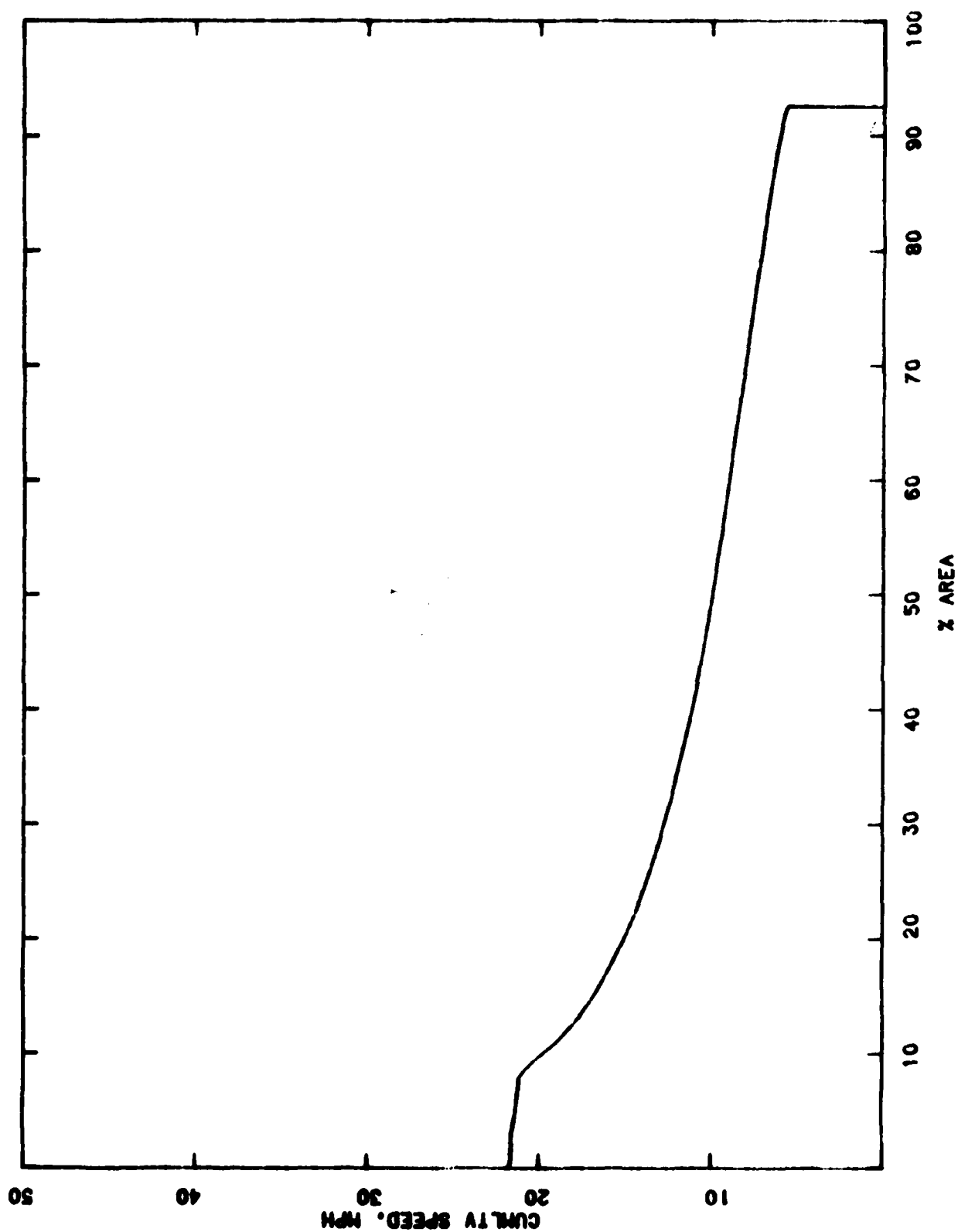
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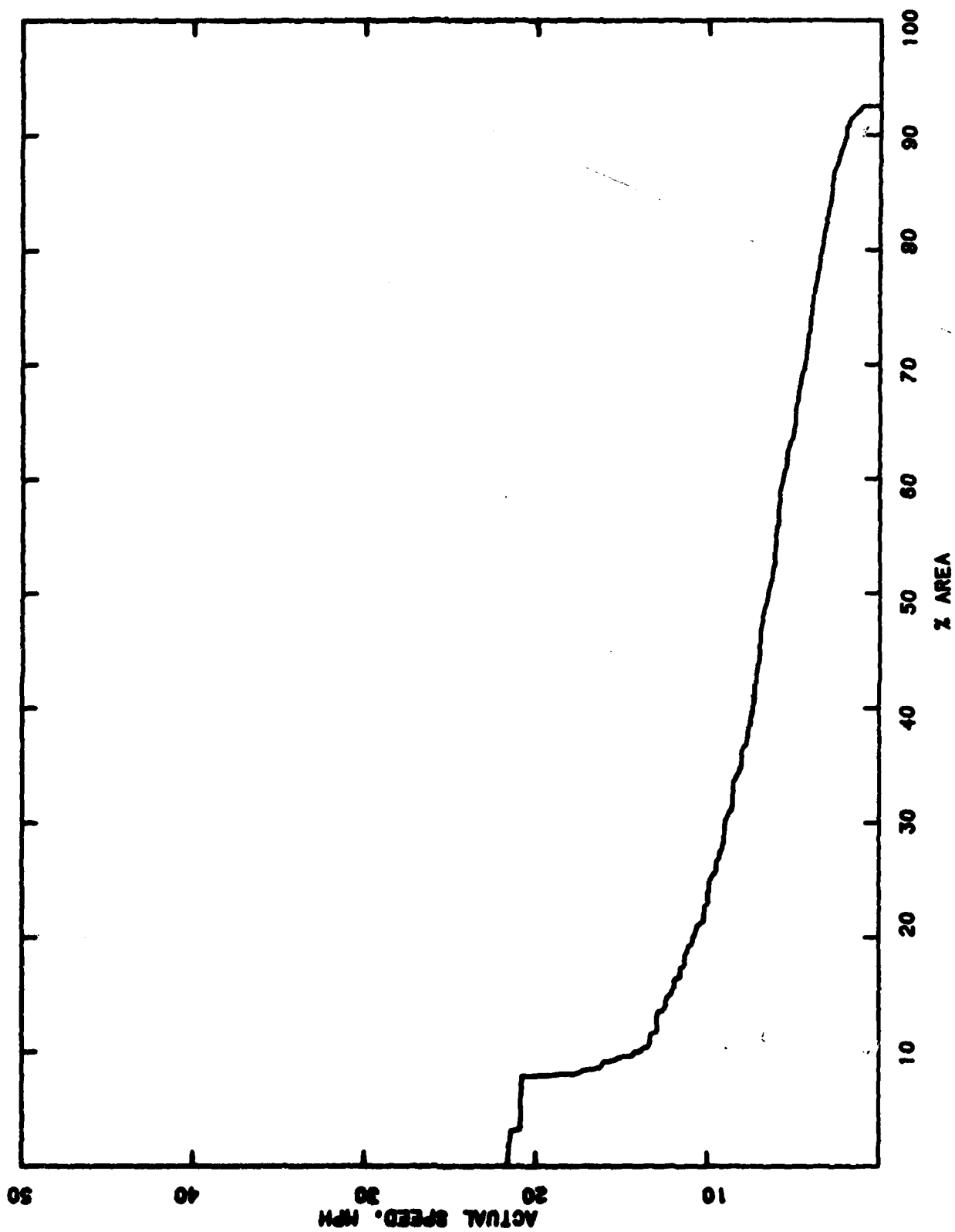
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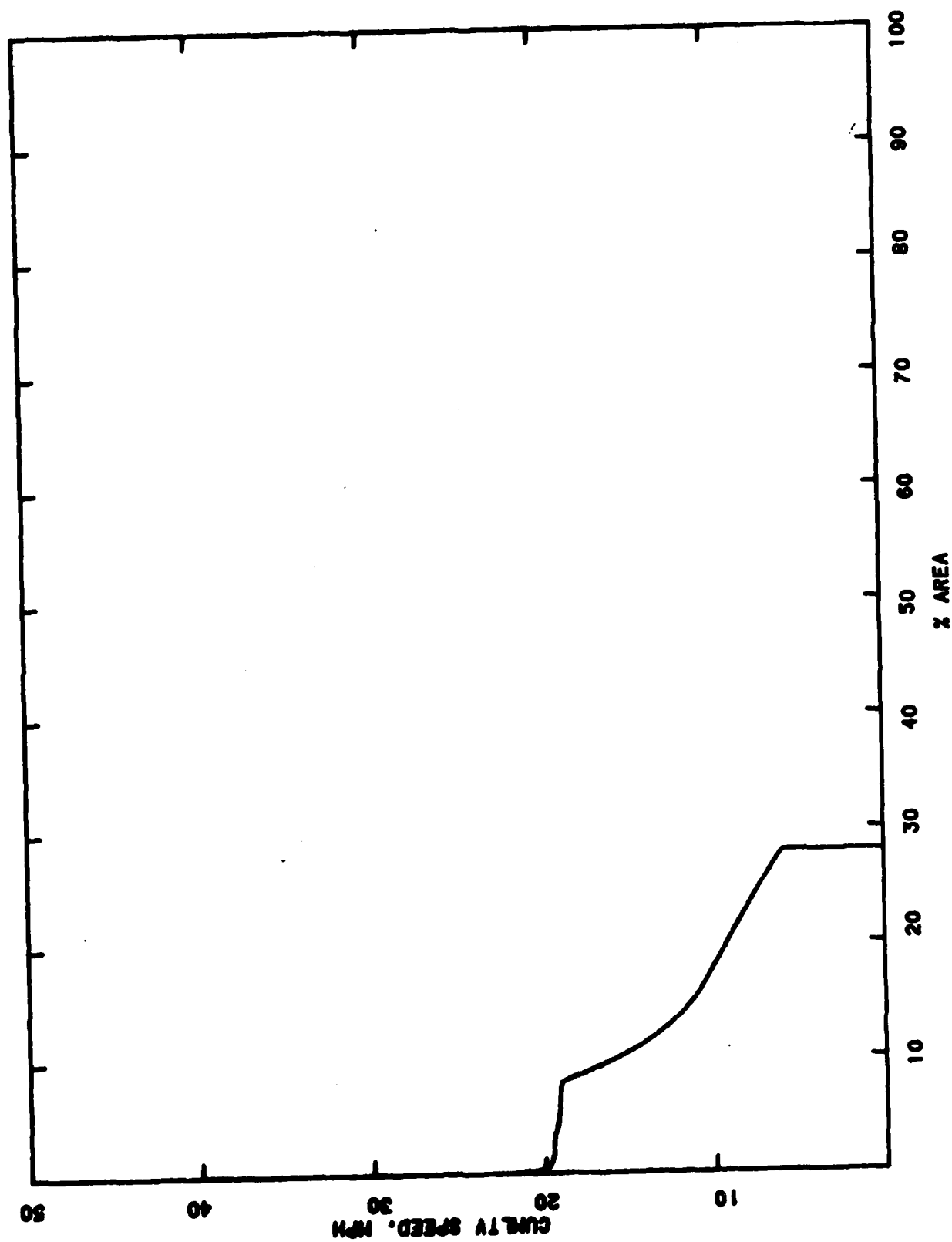
PERFORMANCE OF M559 IN EUROPE2 DRY



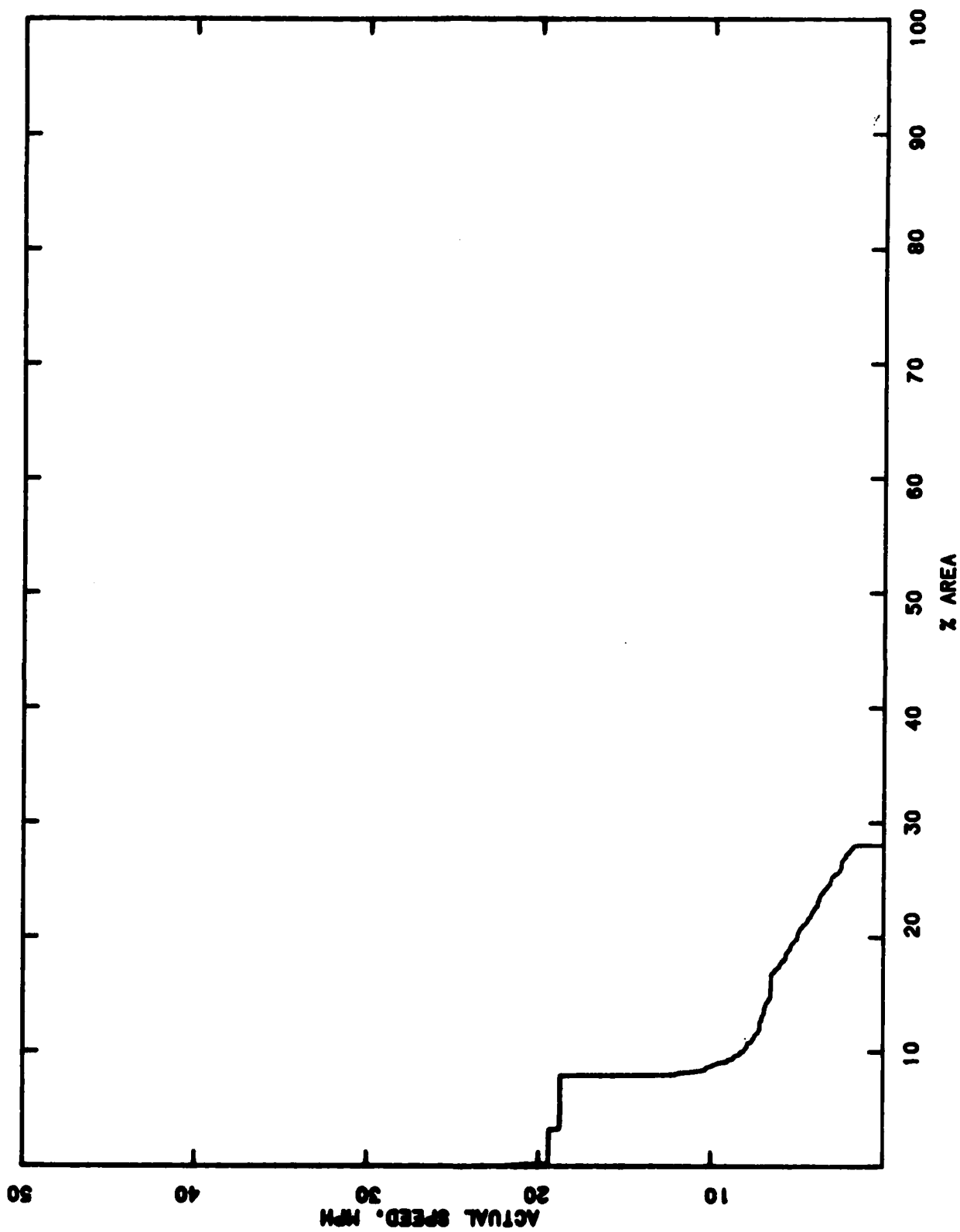
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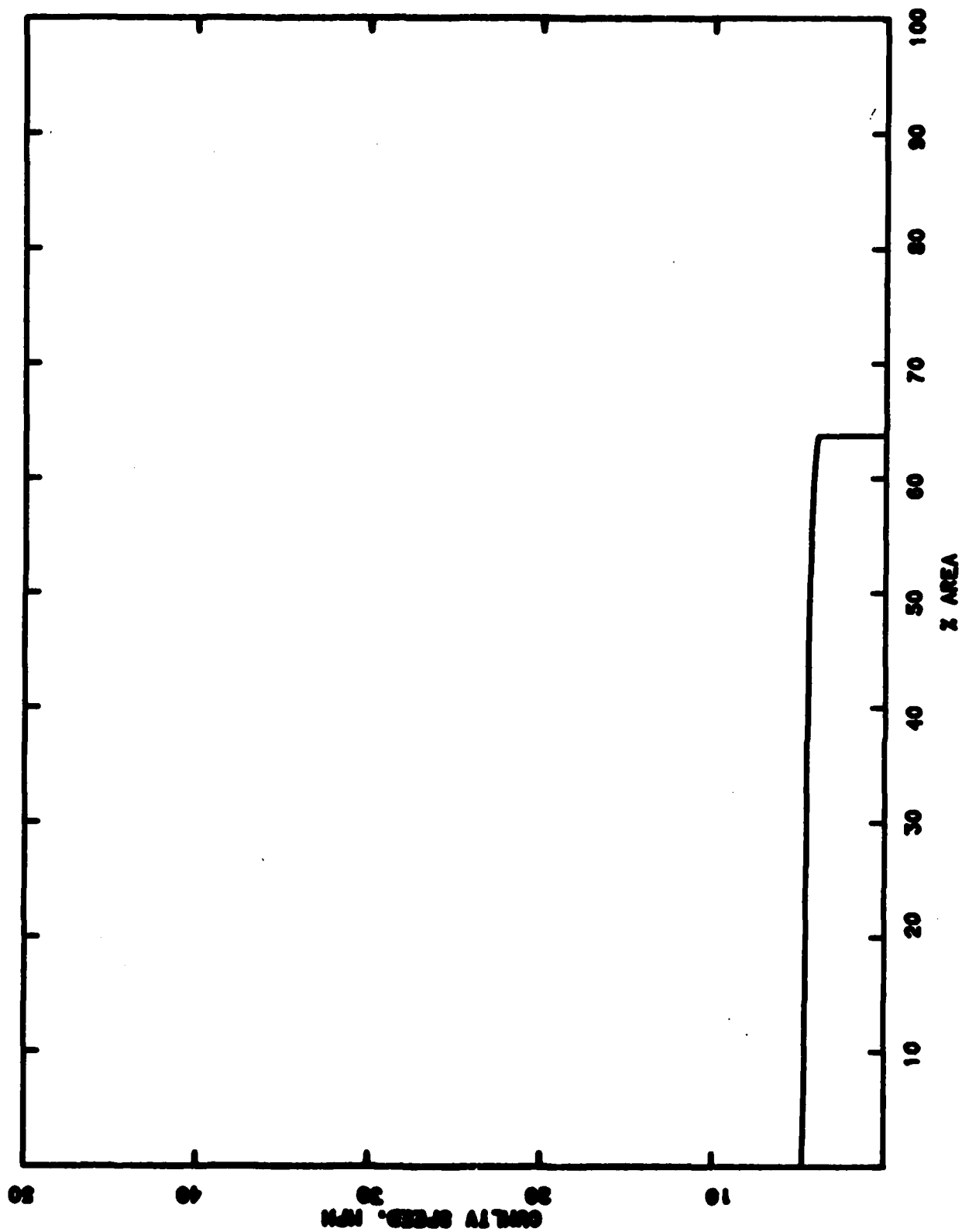
PERFORMANCE OF M559 IN EUROPE2 WET



PERFORMANCE OF M559 IN EUROPE2 WET



PERFORMANCE OF H559 IN EUROPE2 SNOW



AD-A133 700

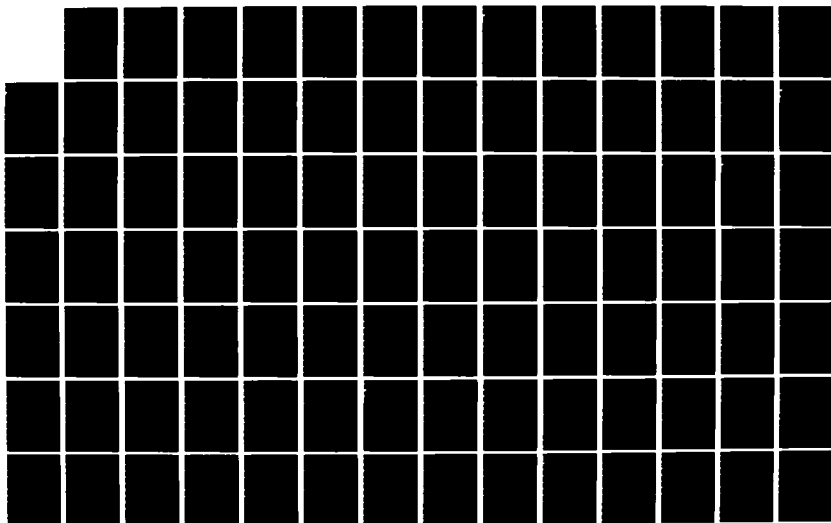
MOBILITY AND TRANSPORTATION ANALYSIS IN SUPPORT OF THE
LIGHT ATTACK BATTA. (U) ARMY MATERIEL SYSTEMS ANALYSIS
ACTIVITY ABERDEEN PROVING GROU. C R DIETZ ET AL
MAY 83 AMSAA-TR-374-VOL-2

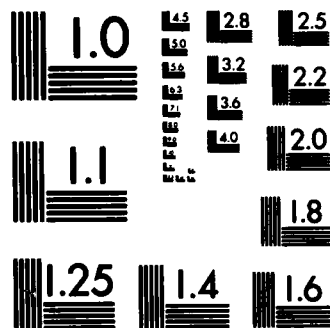
2/3

UNCLASSIFIED

F/G 15/5

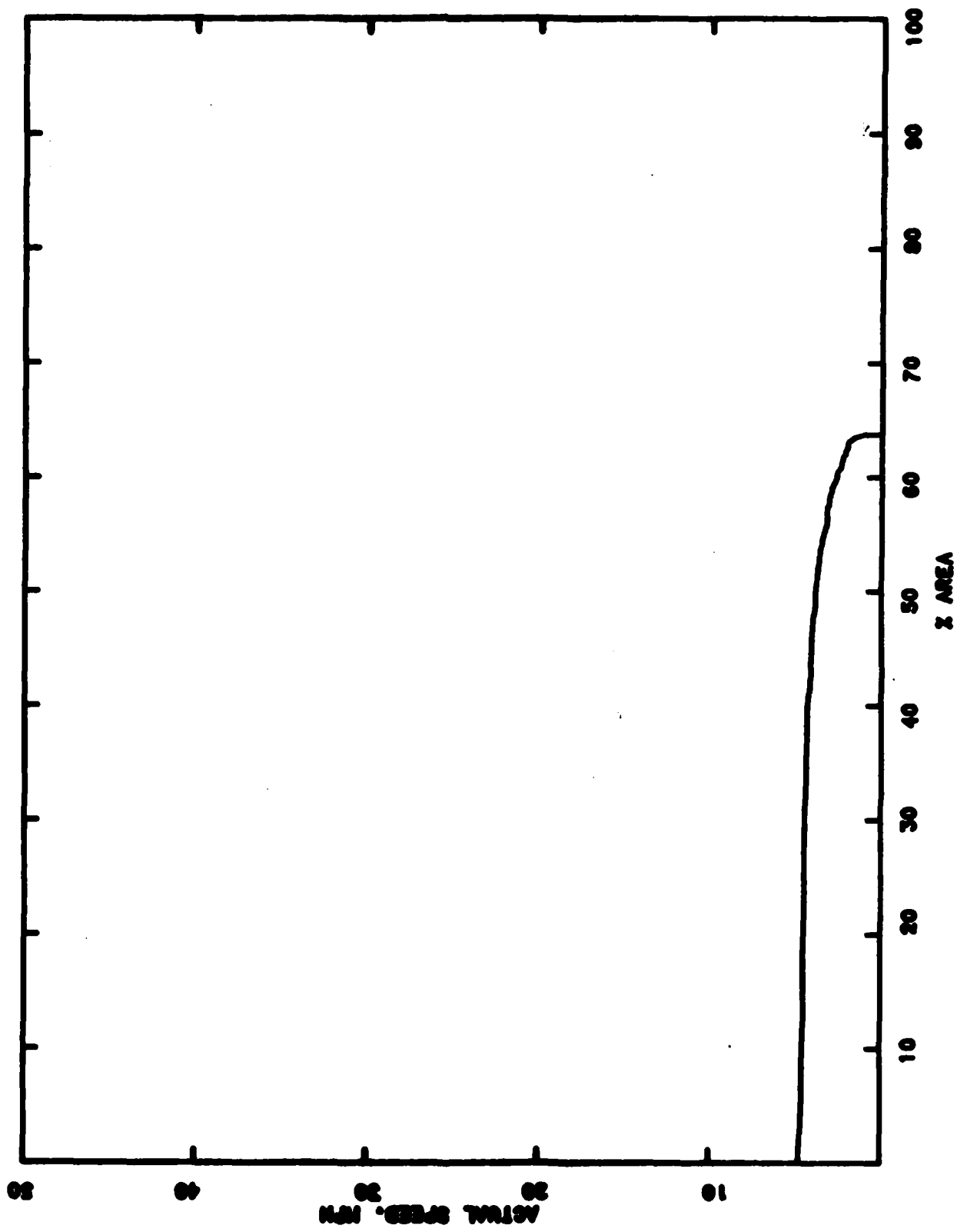
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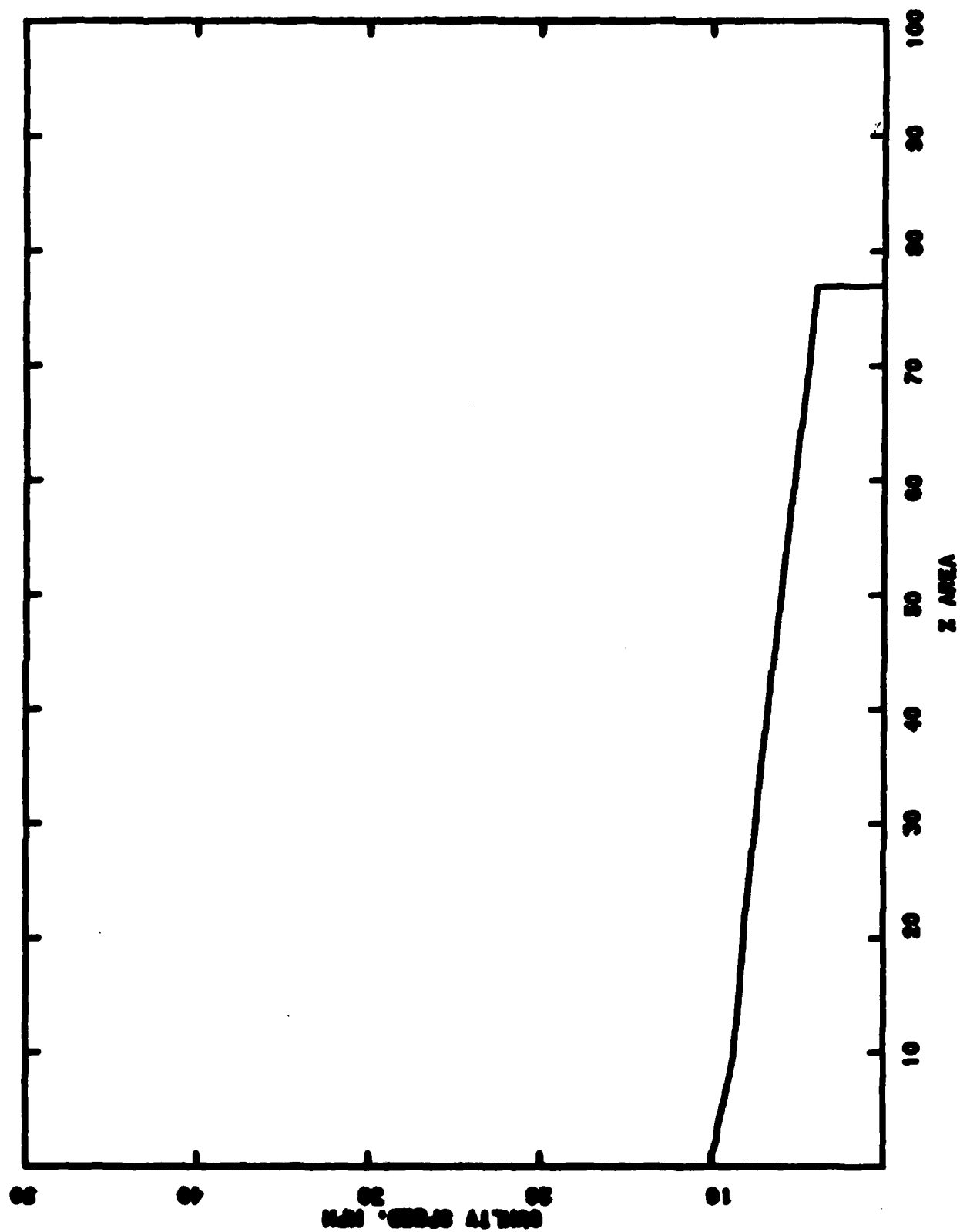


MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

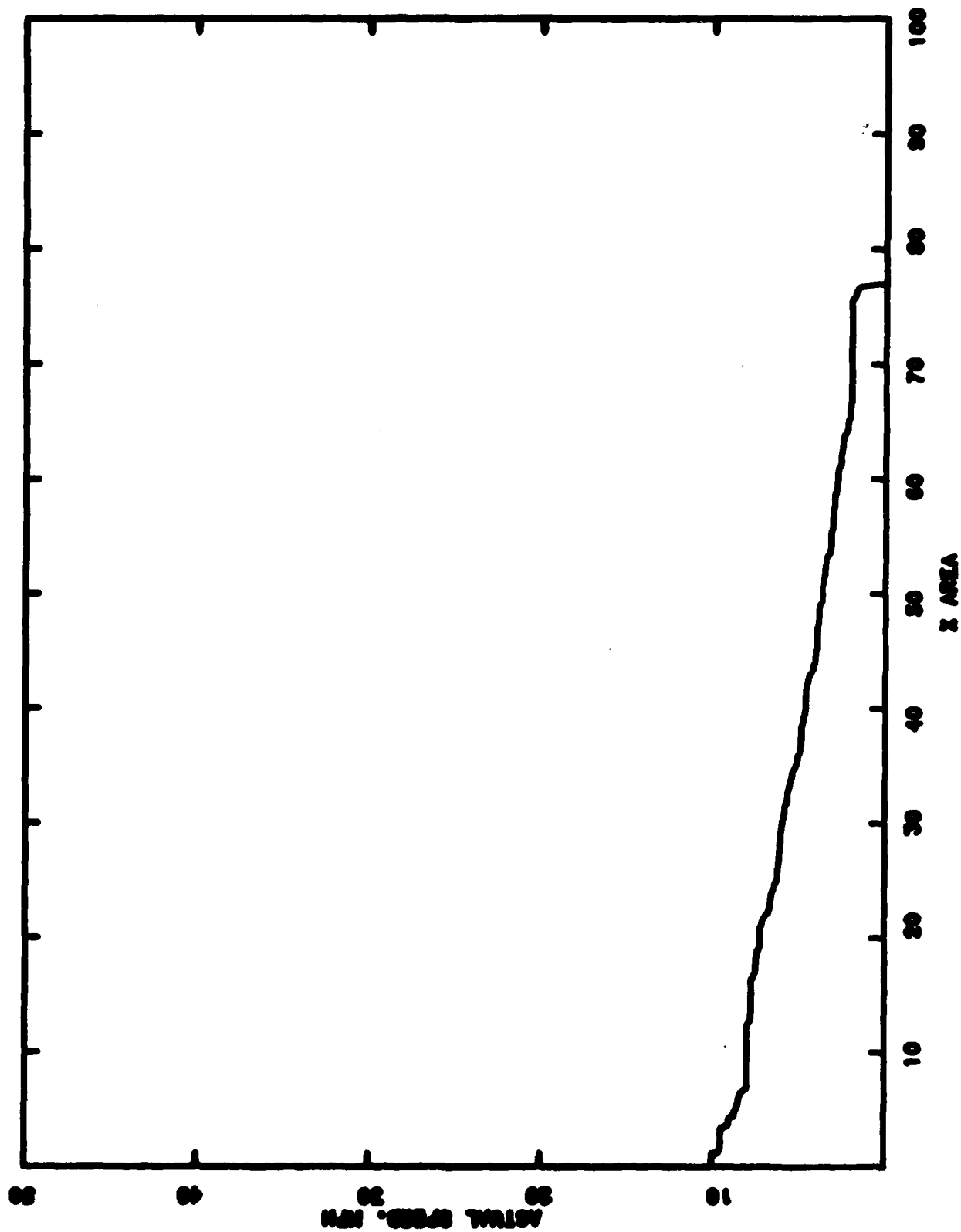
PERFORMANCE OF M559 IN EUROPE2 SNOW



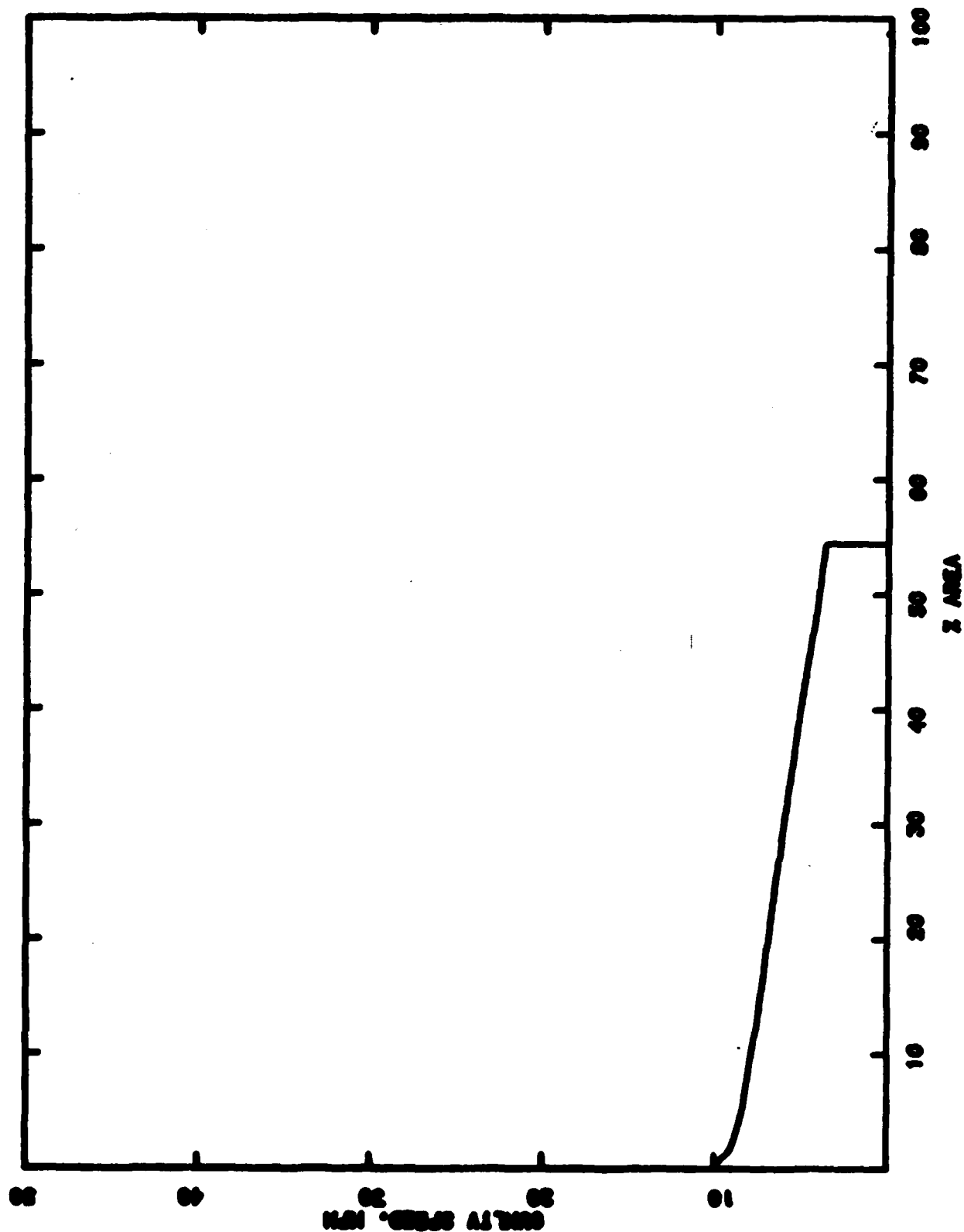
PERFORMANCE OF H559 IN HIDEAST1 DRY



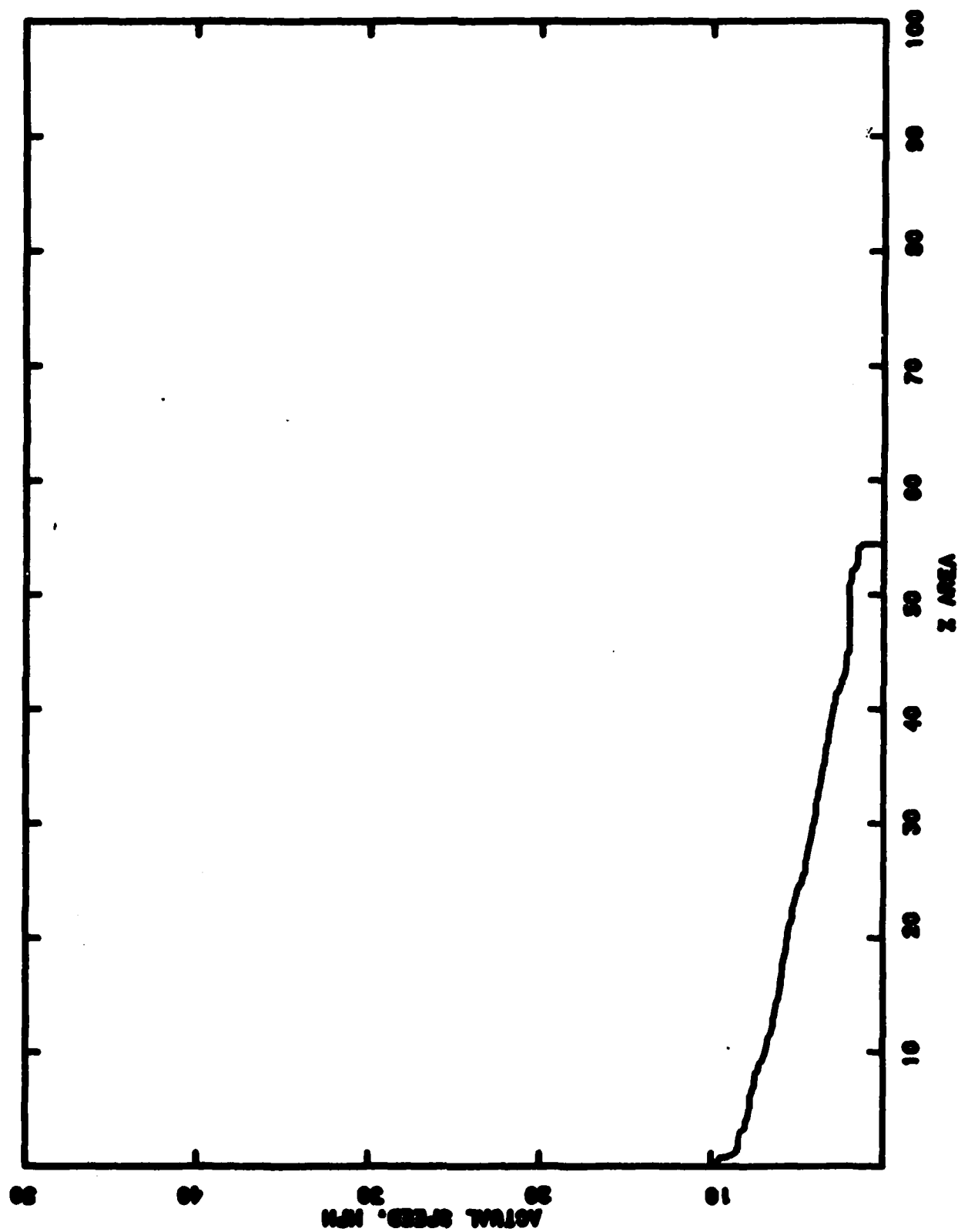
PERFORMANCE OF MS59 IN HIDEAST1 DRY



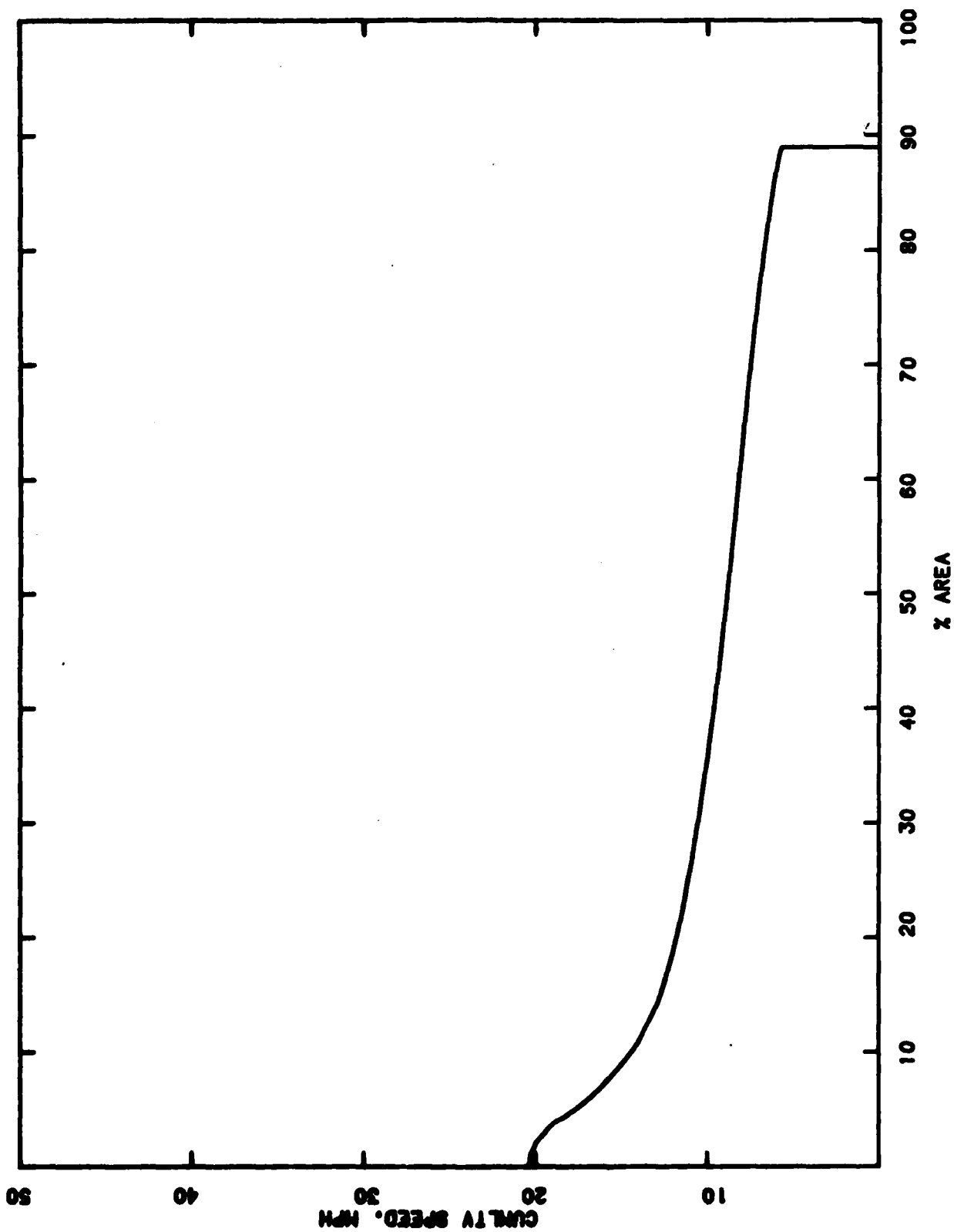
PERFORMANCE OF H359 IN HIDEAST1 NET



PERFORMANCE OF HSSO IN HIDEAST1 NET

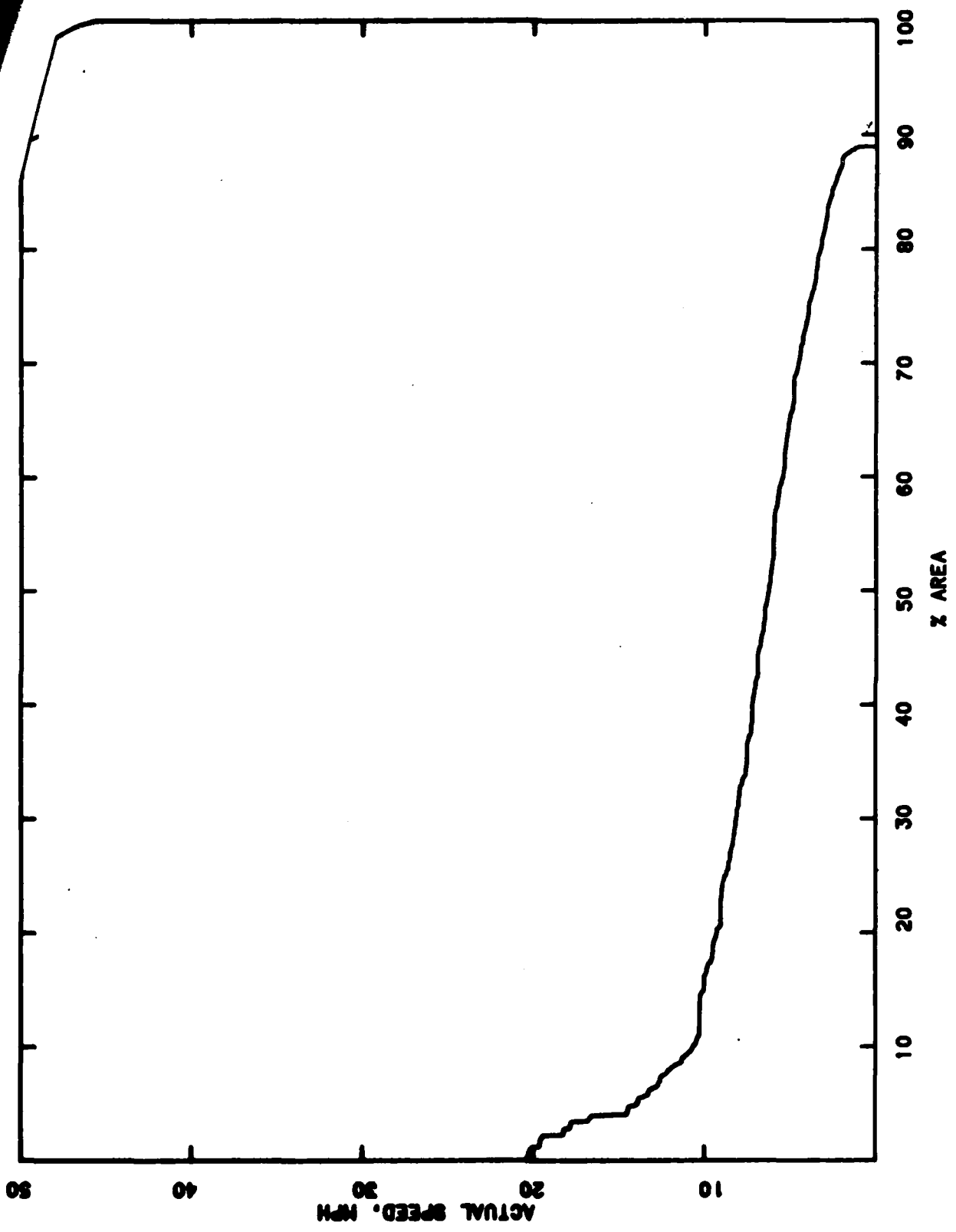


PERFORMANCE OF M559101 IN EUROPE1 DRY

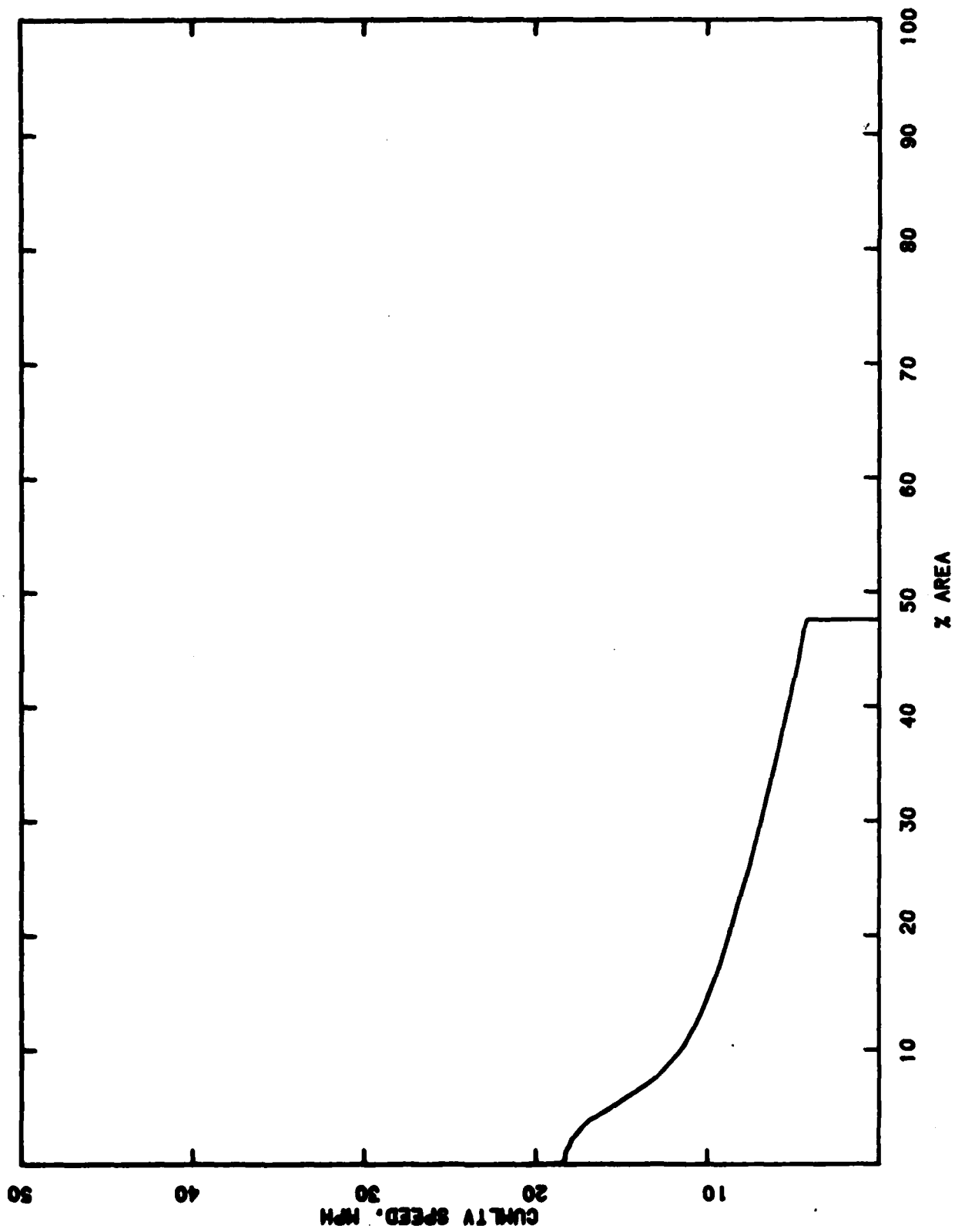


PERFORMANCE OF M559101 IN EUROPE1

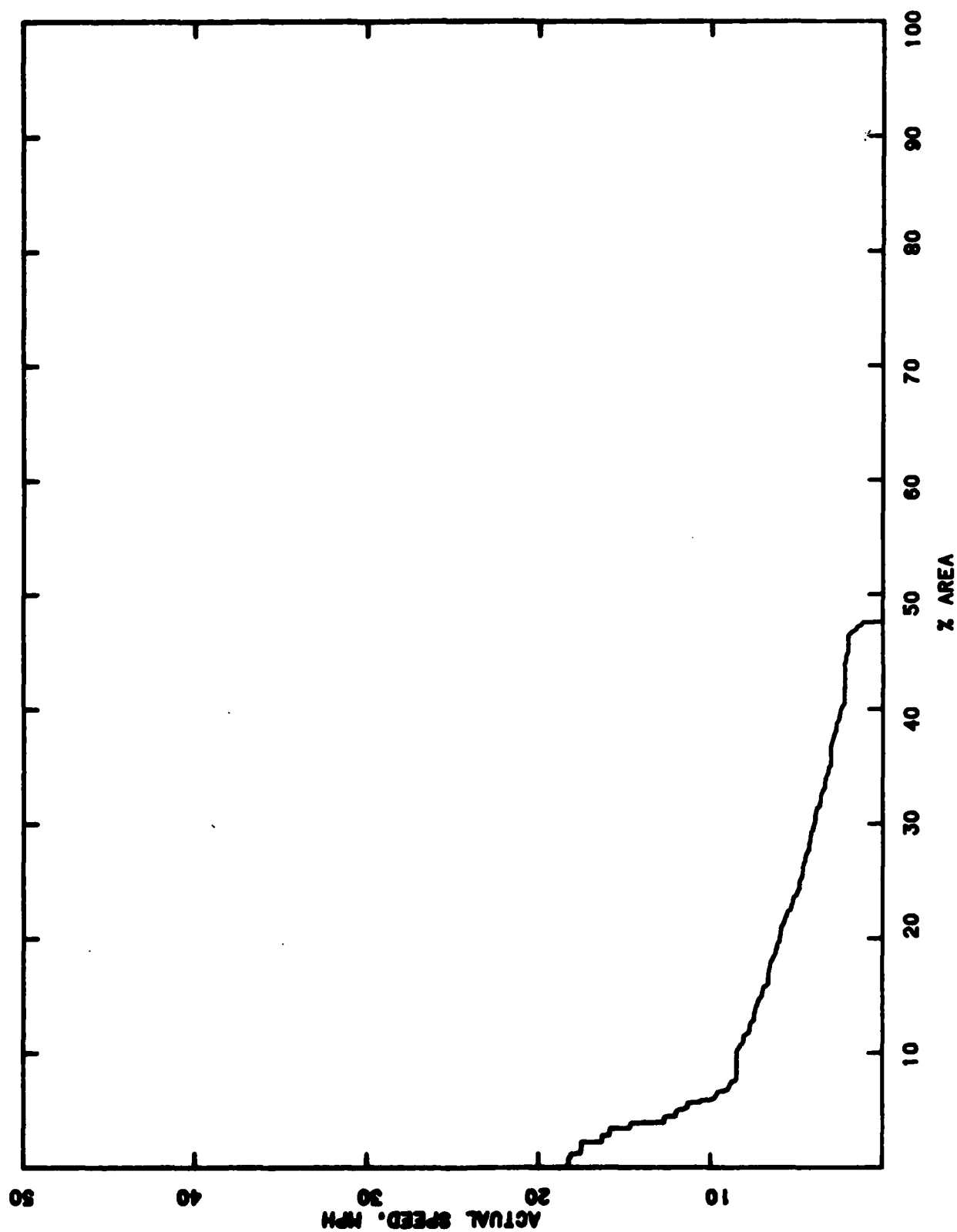
DRY



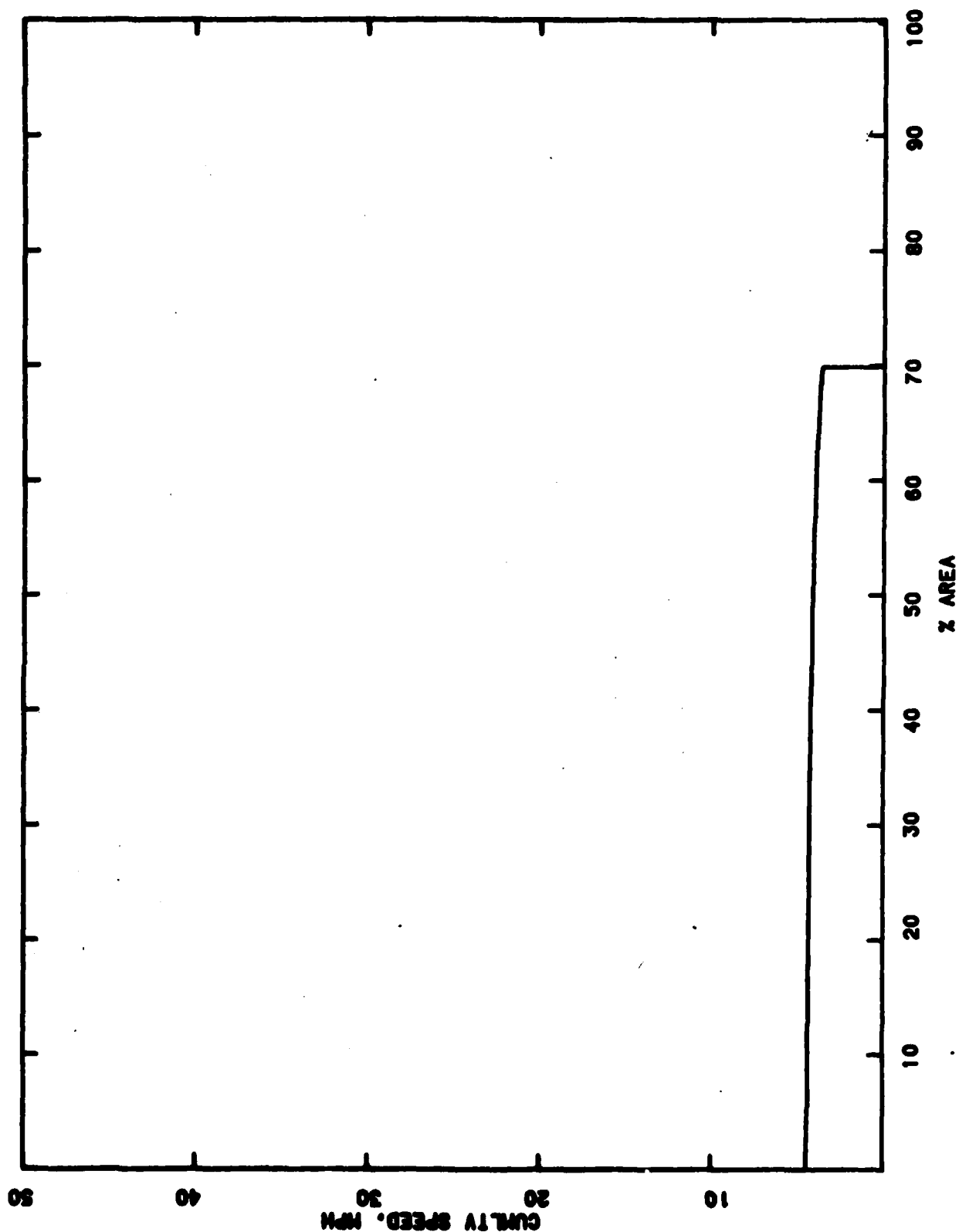
PERFORMANCE OF M559101 IN EUROPE1 WET



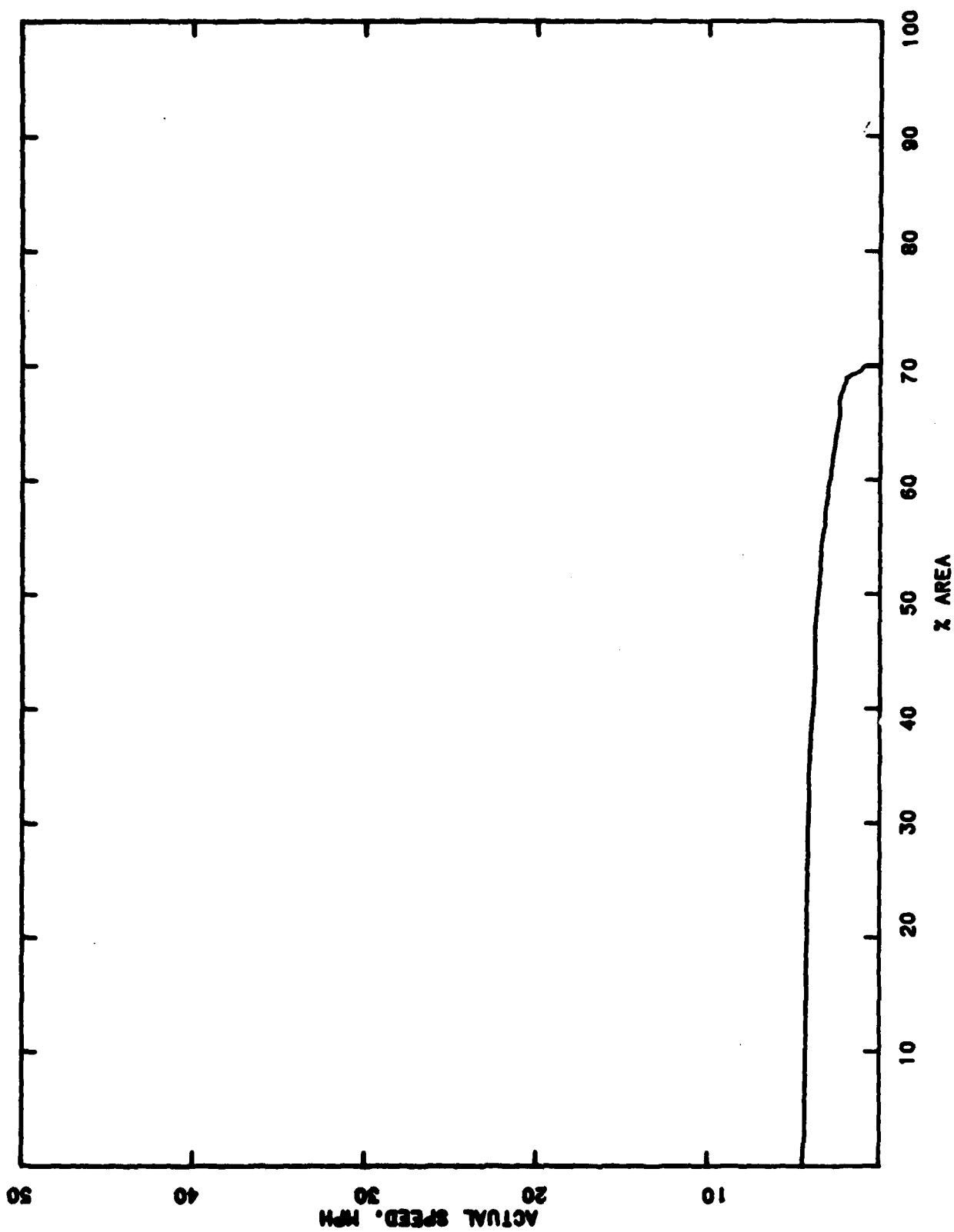
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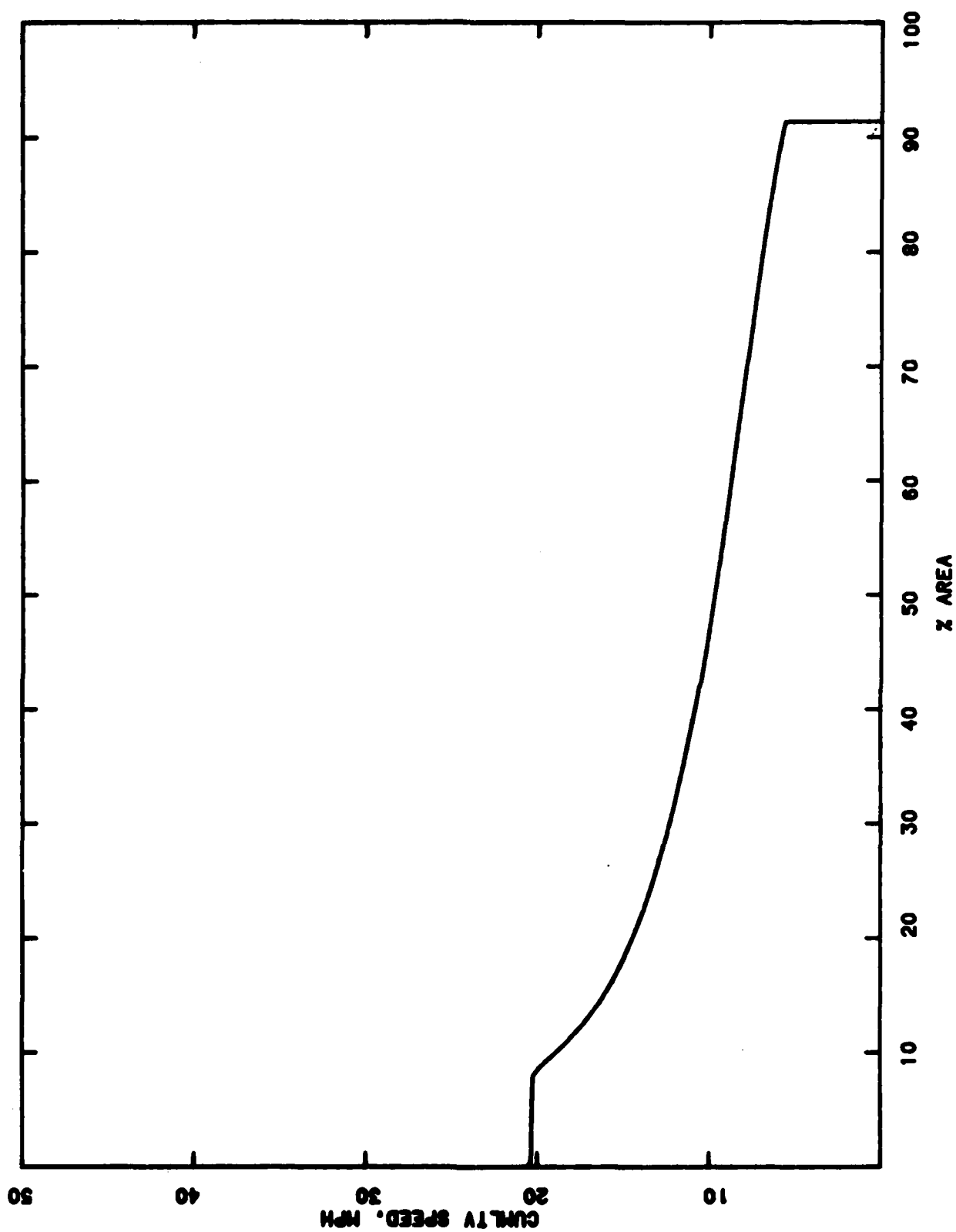
PERFORMANCE OF M559101 IN EUROPE1 SNOW



PERFORMANCE OF M559101 IN EUROPE1 SNOW

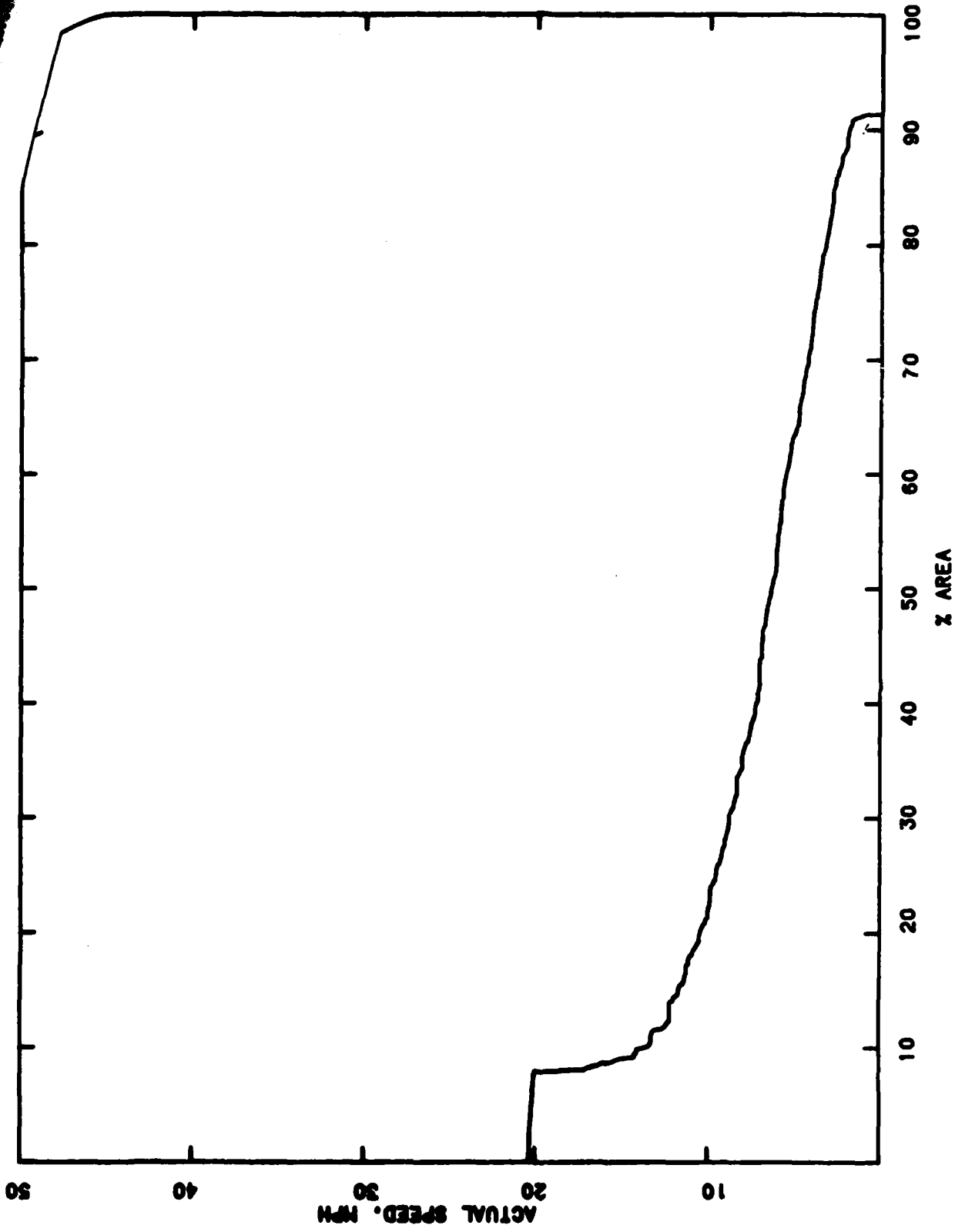


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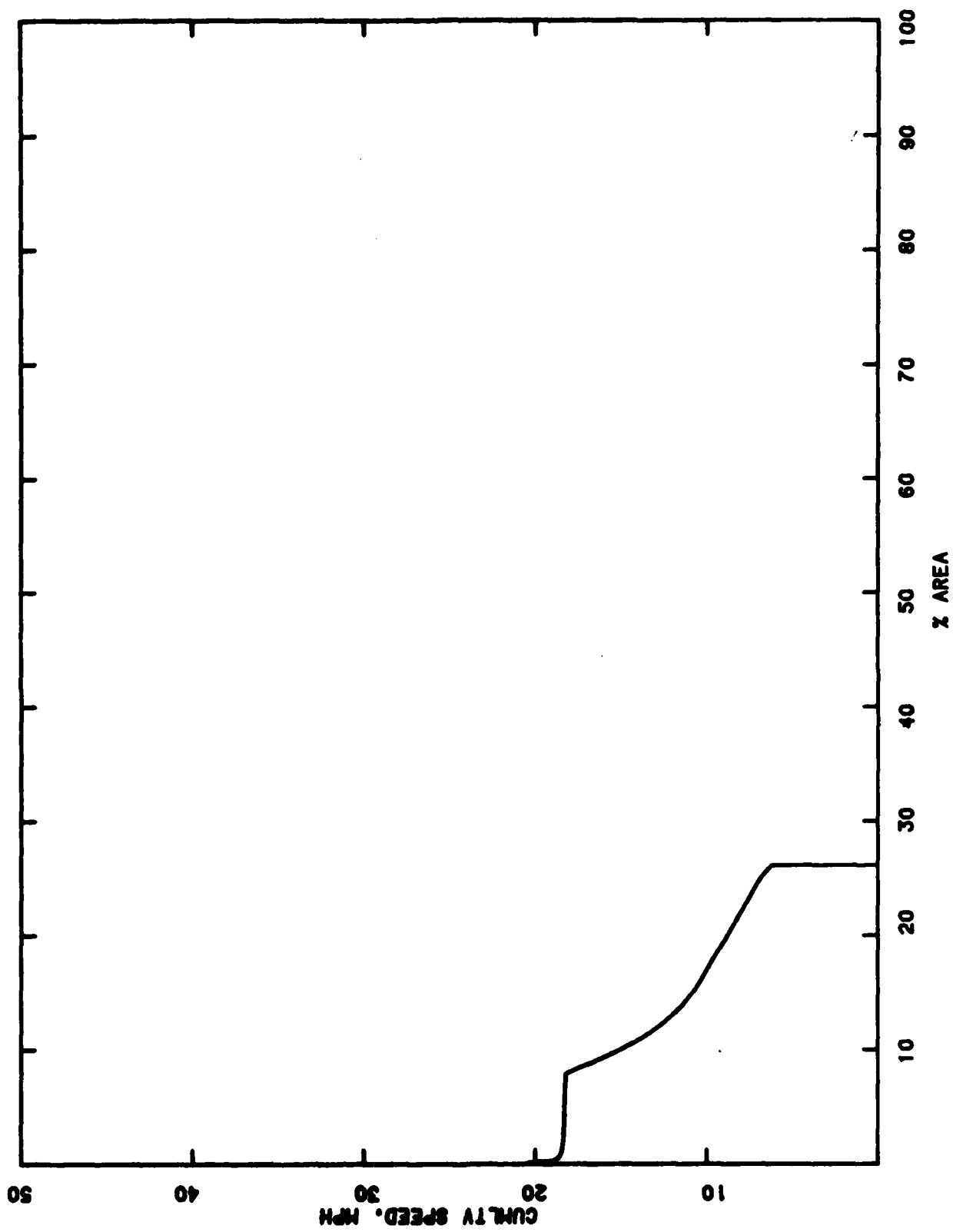


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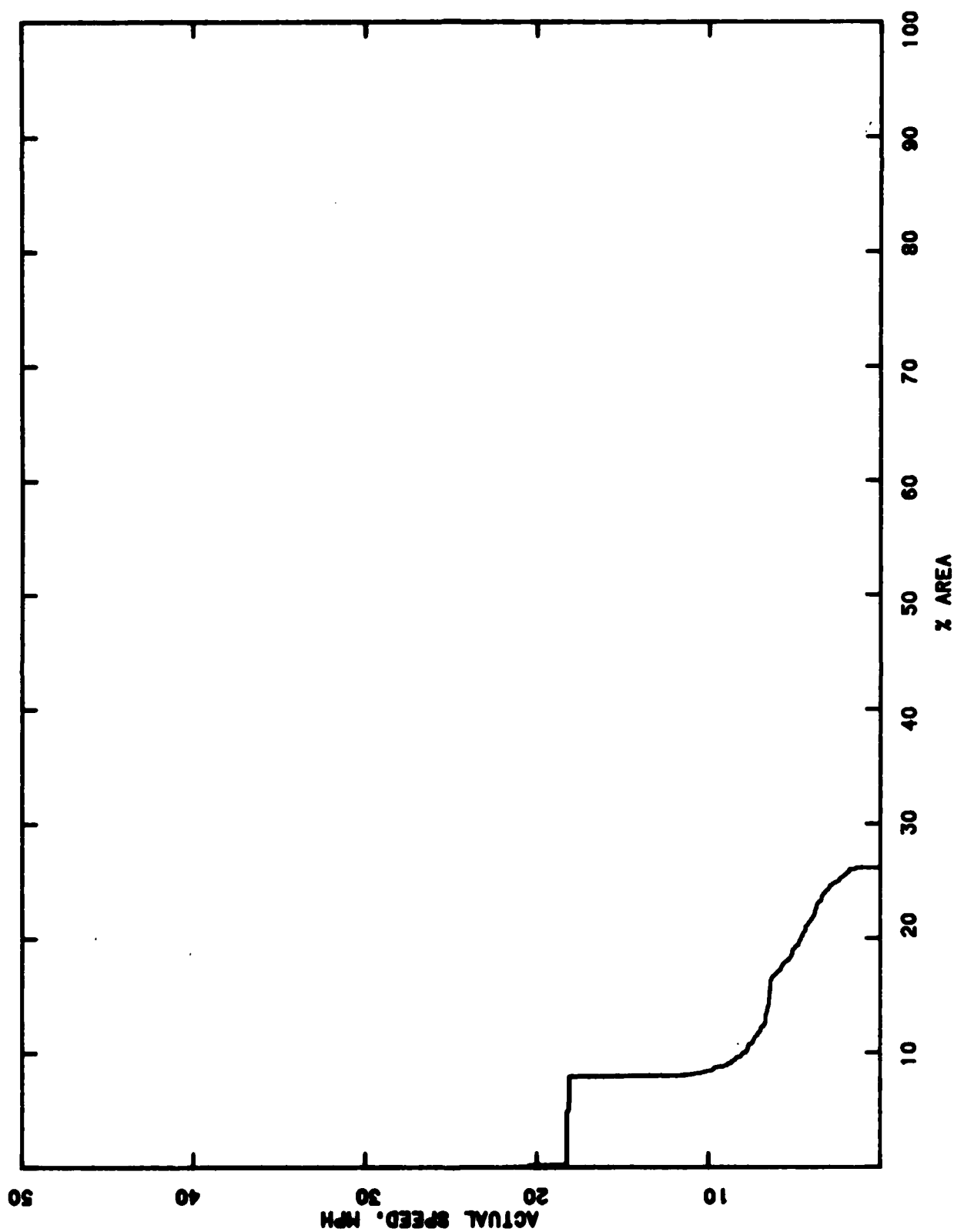
DRY



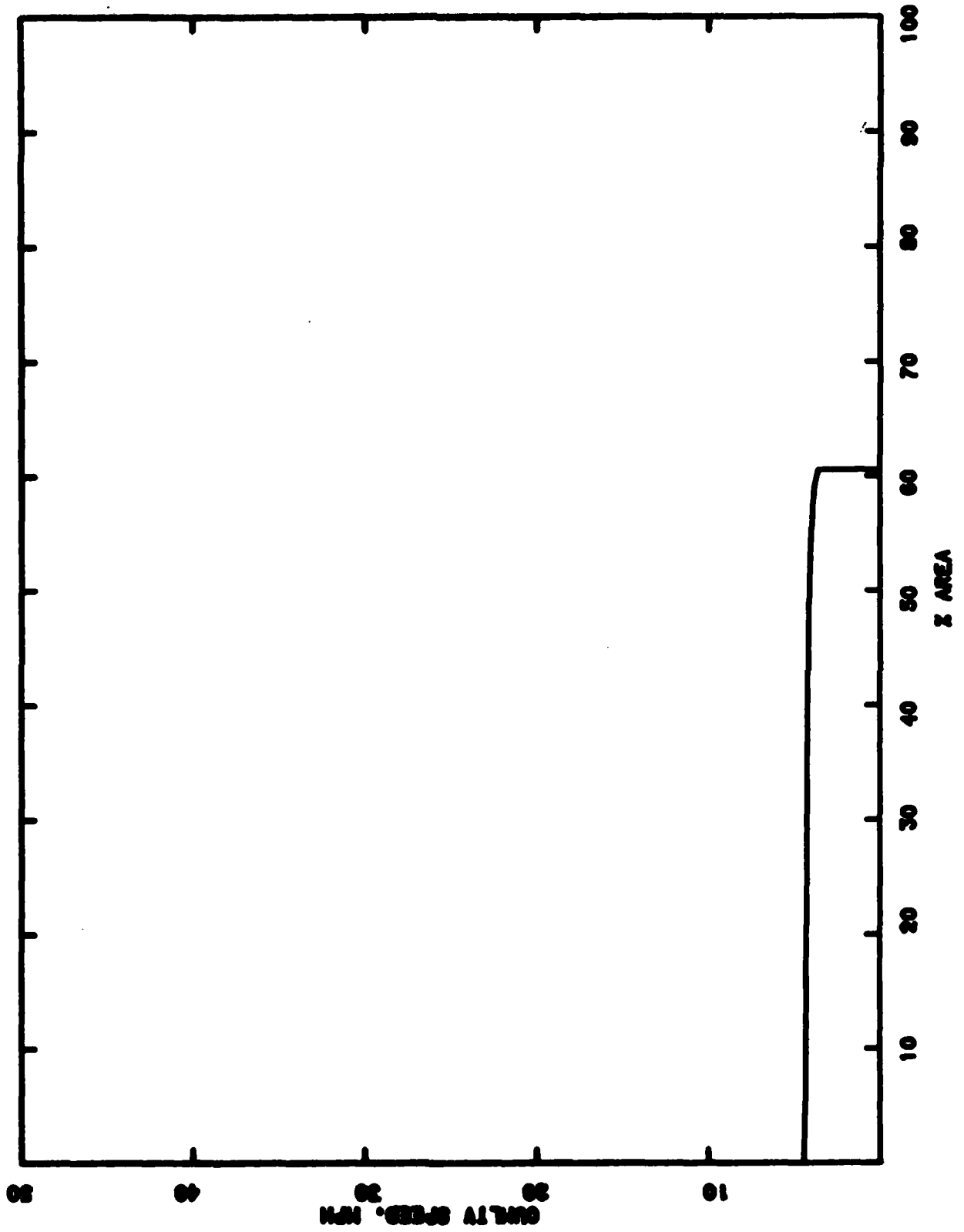
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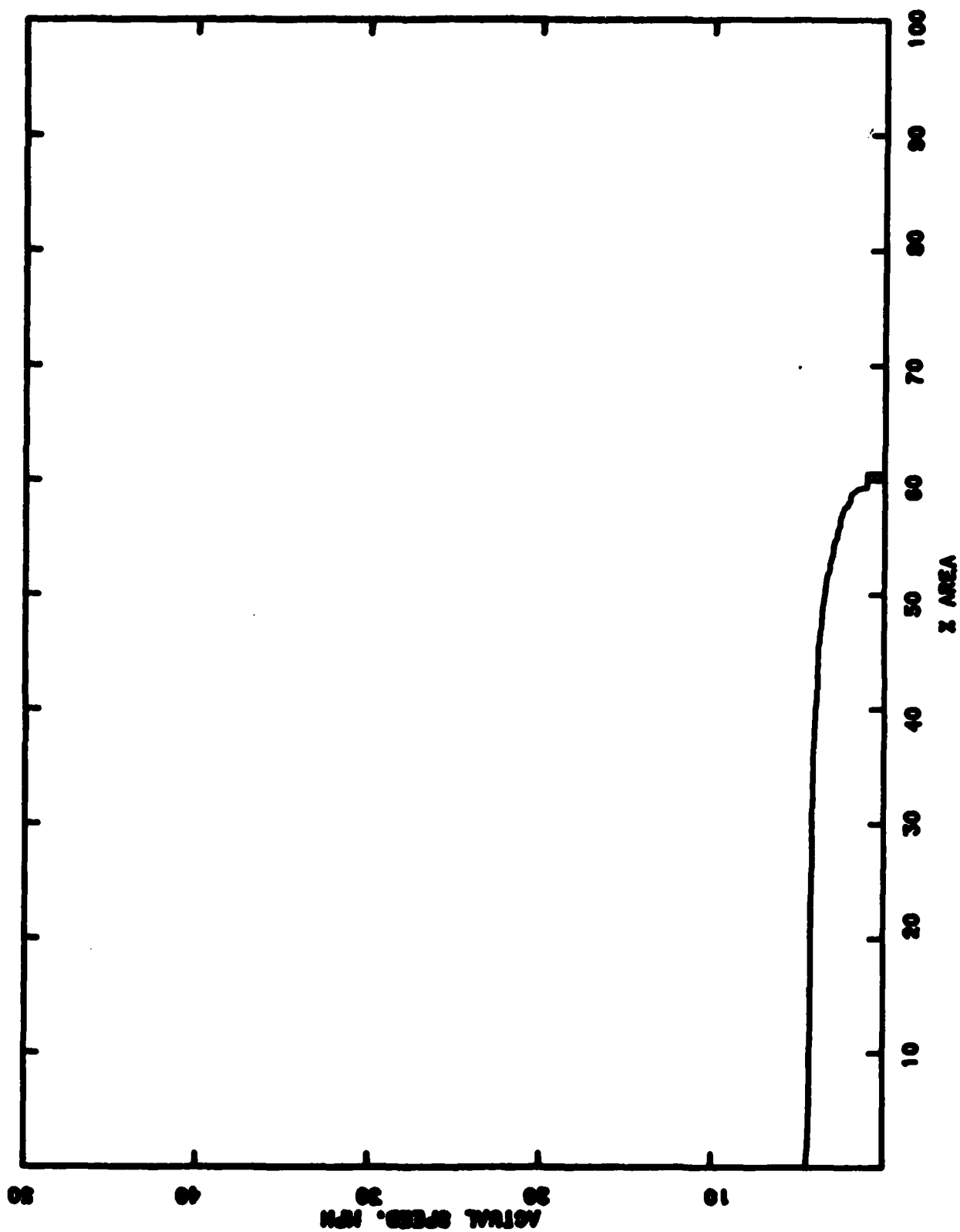
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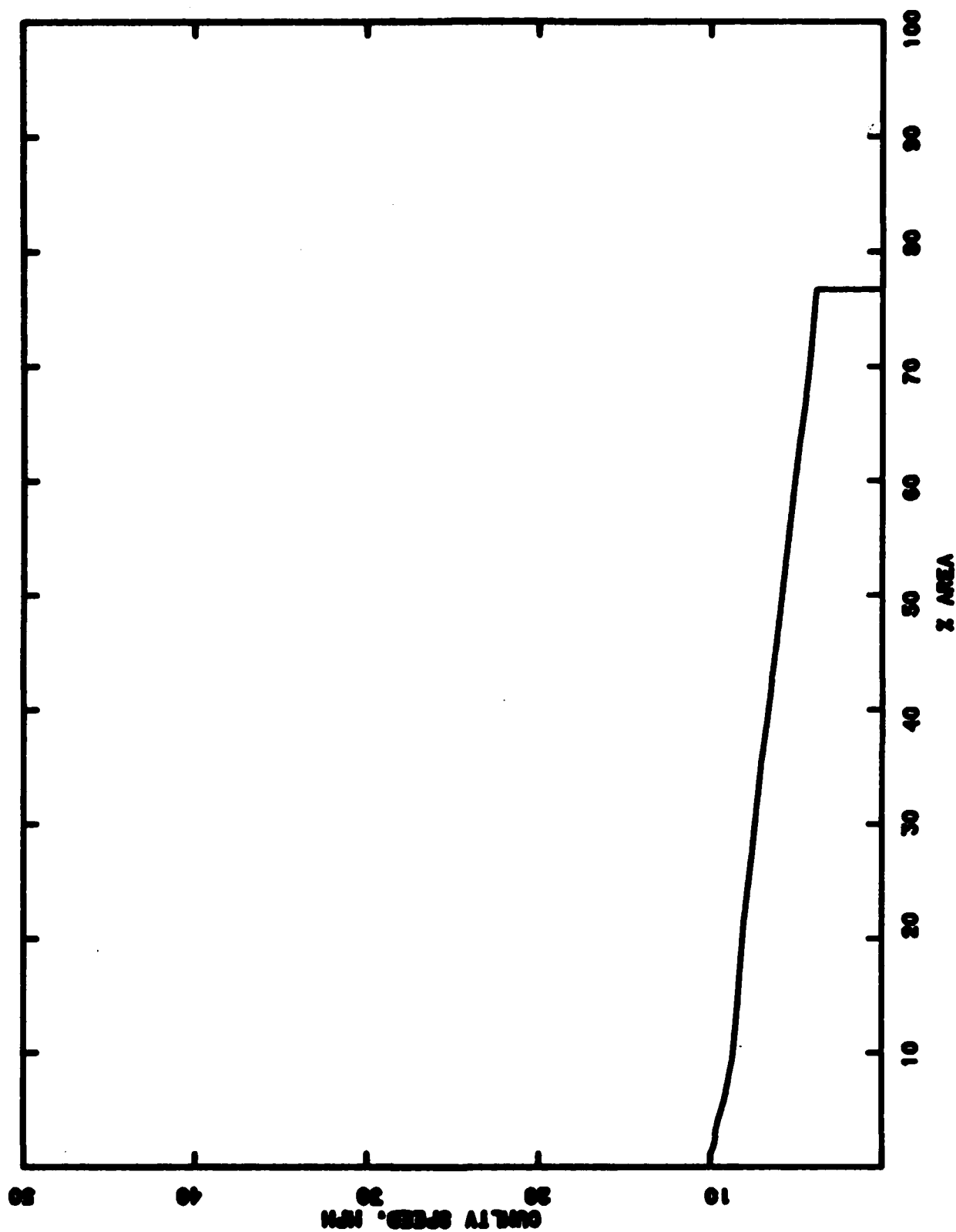
PERFORMANCE OF MS59101 IN EUROPE2 SNOW



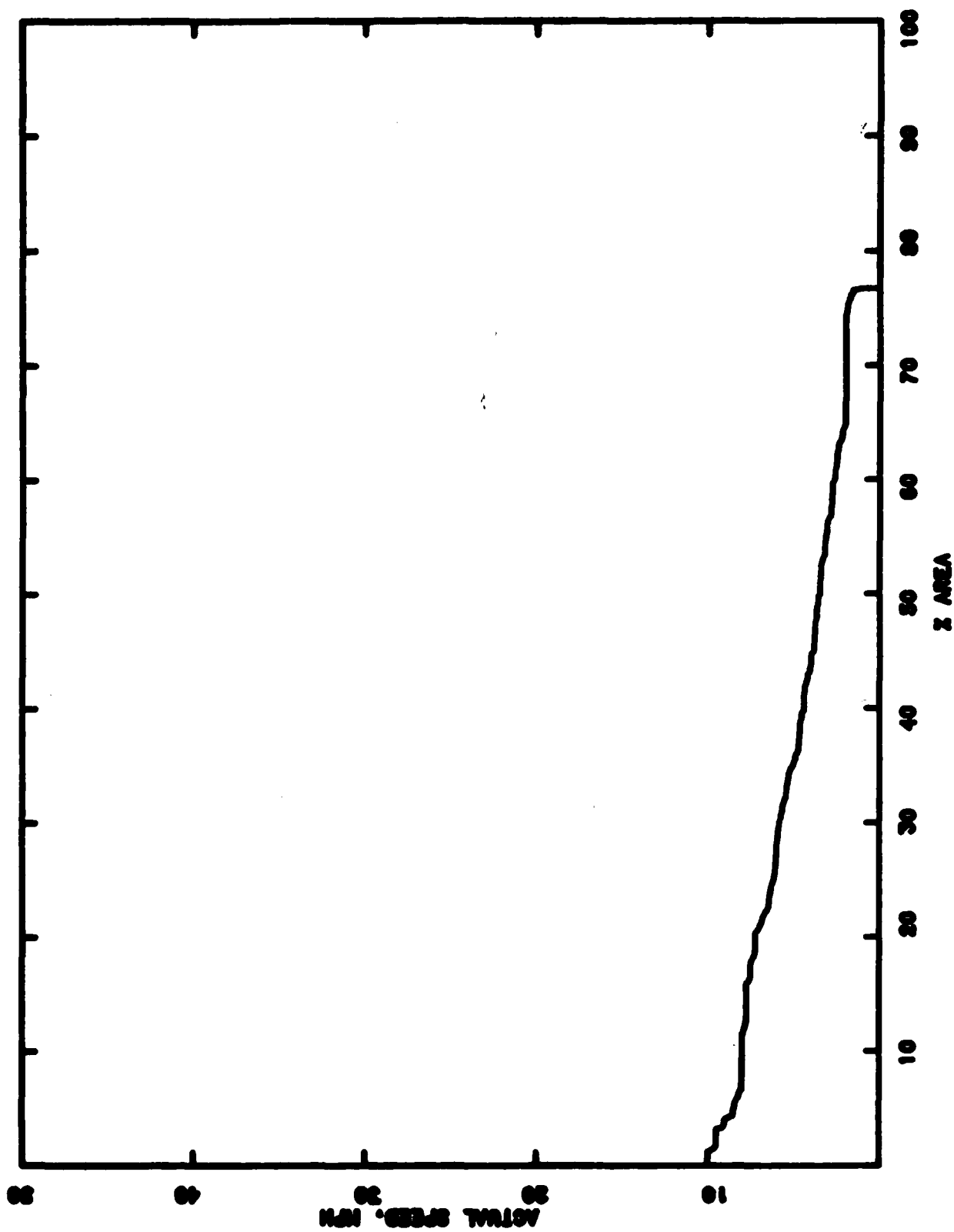
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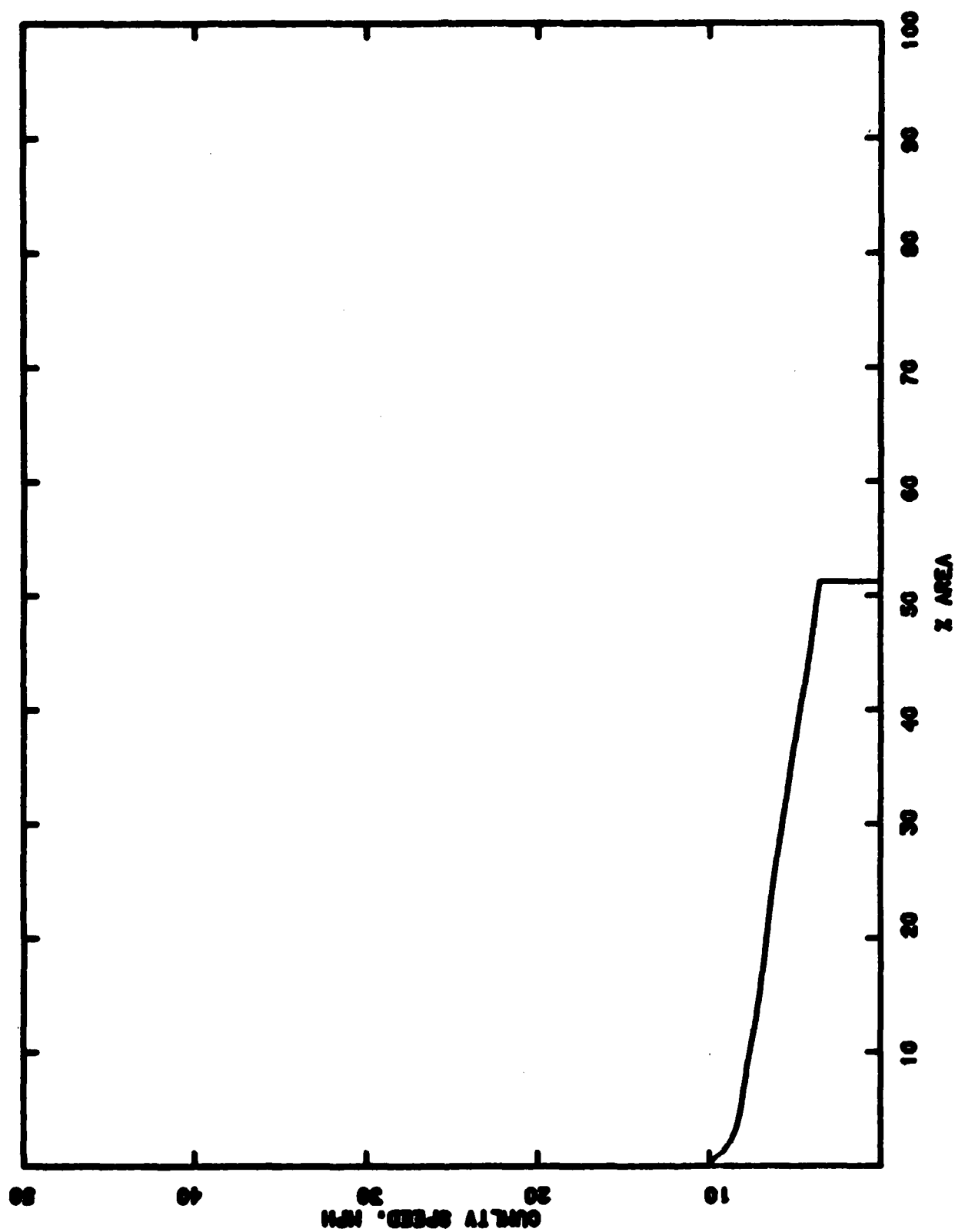
PERFORMANCE OF MS59101 IN HIDEAST1 DRY



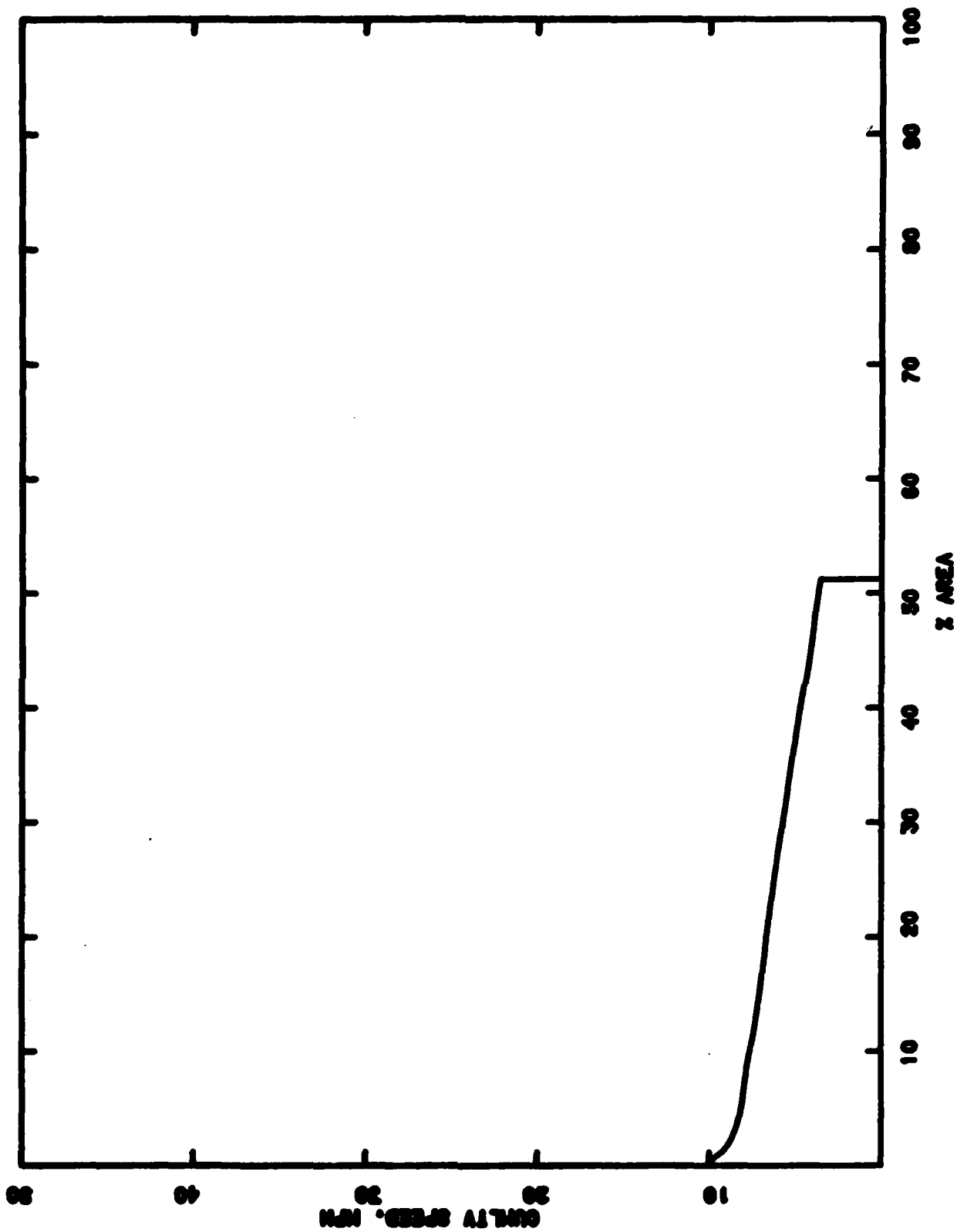
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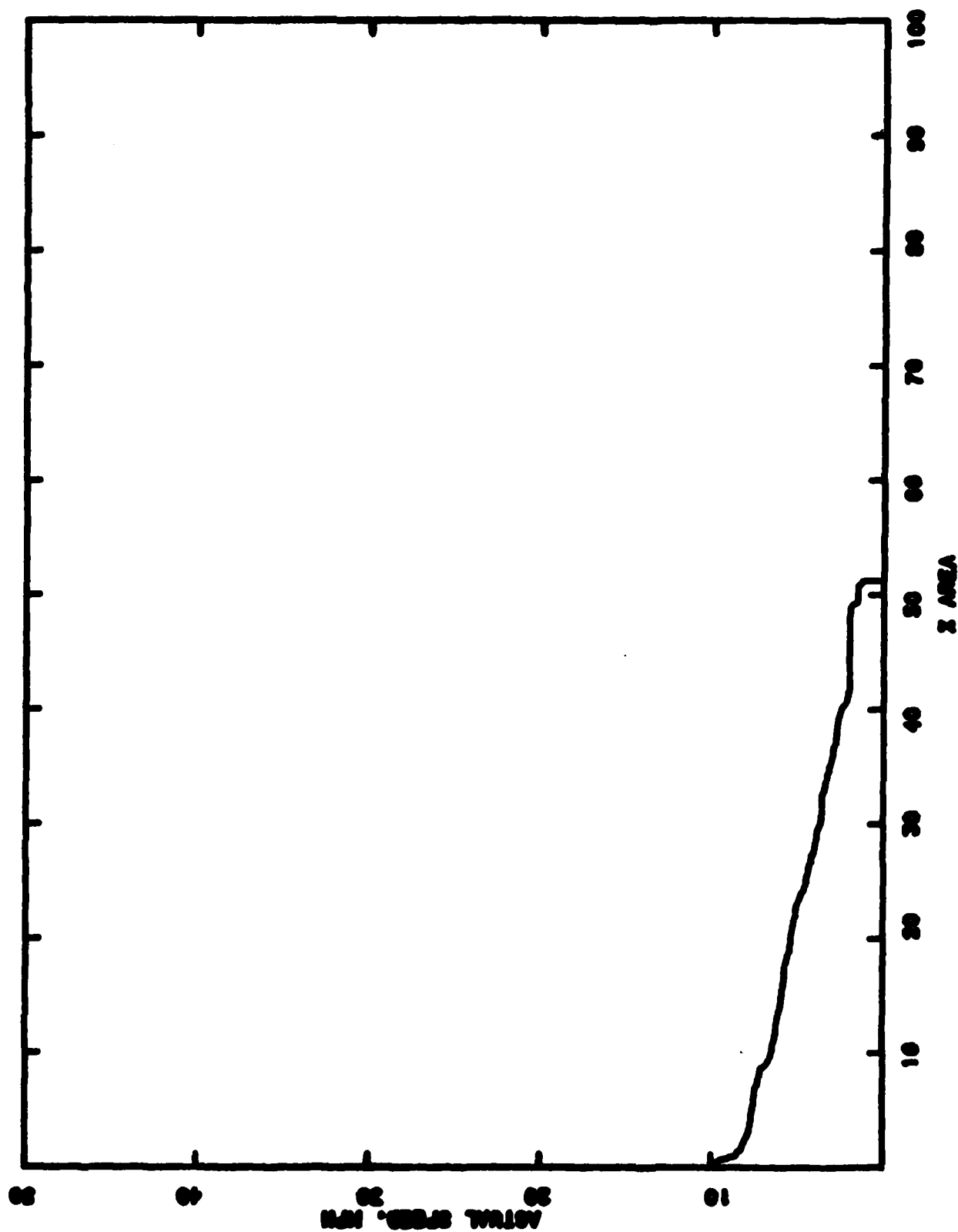
PERFORMANCE OF MSS9101 IN HIDEAST1 NET



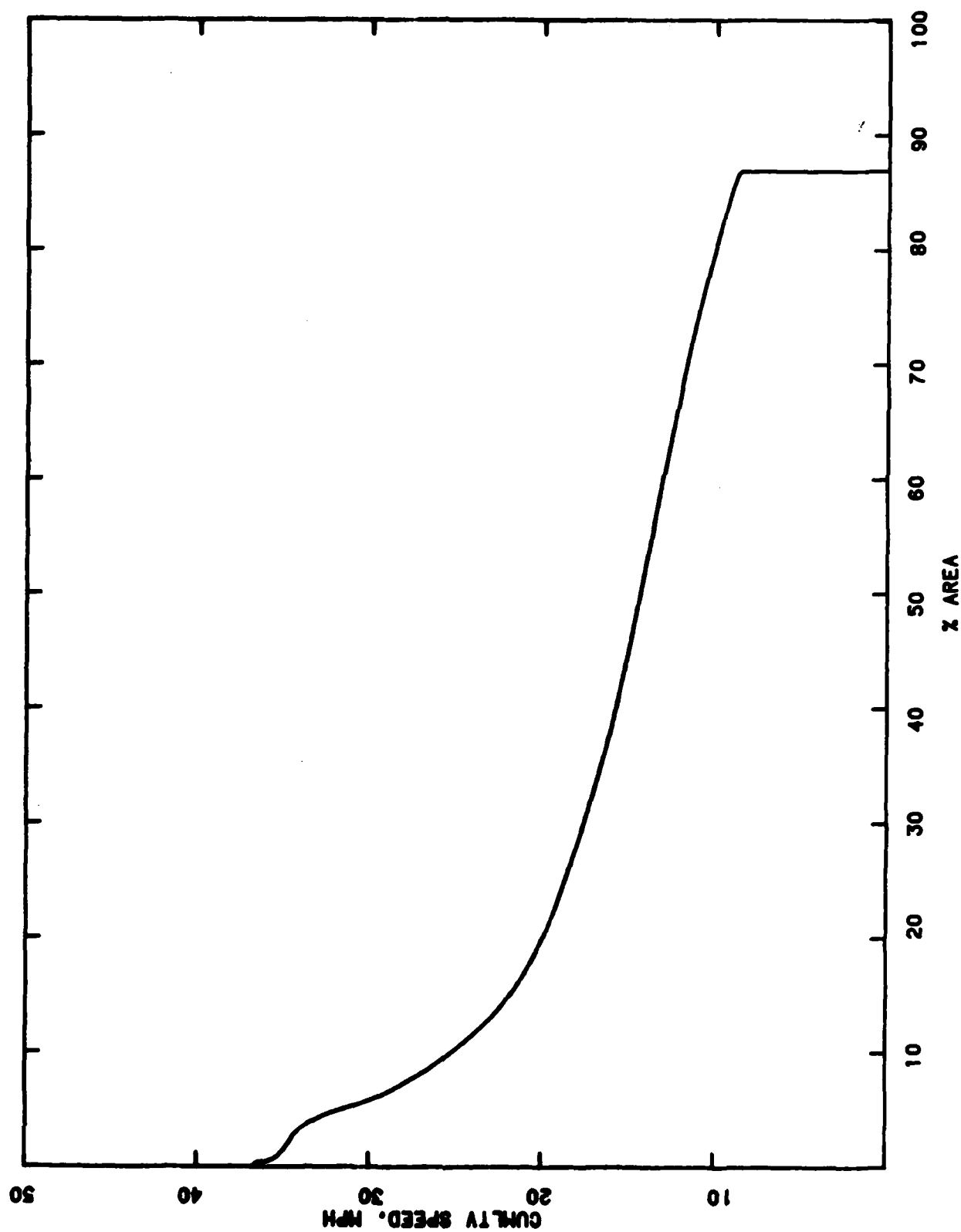
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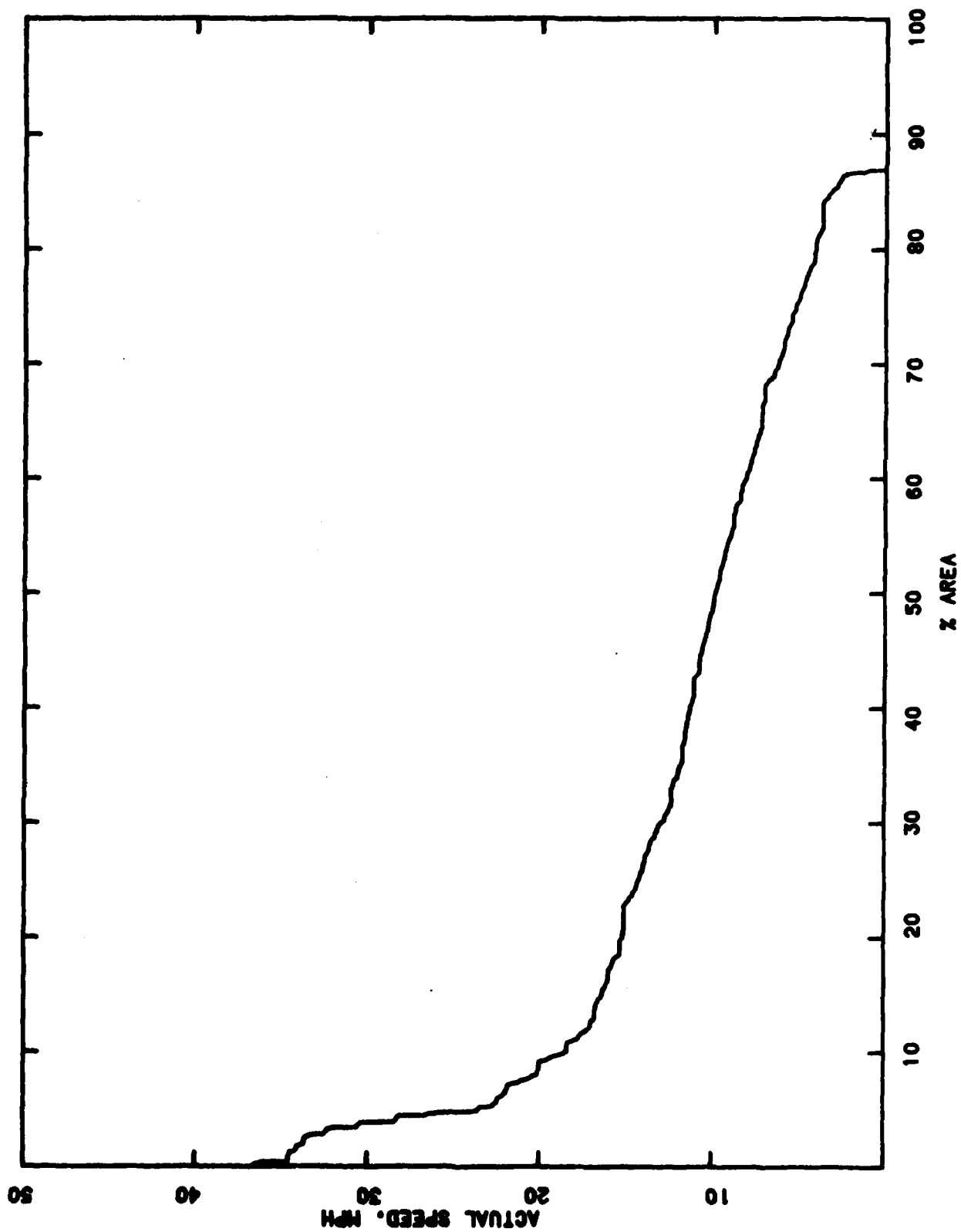
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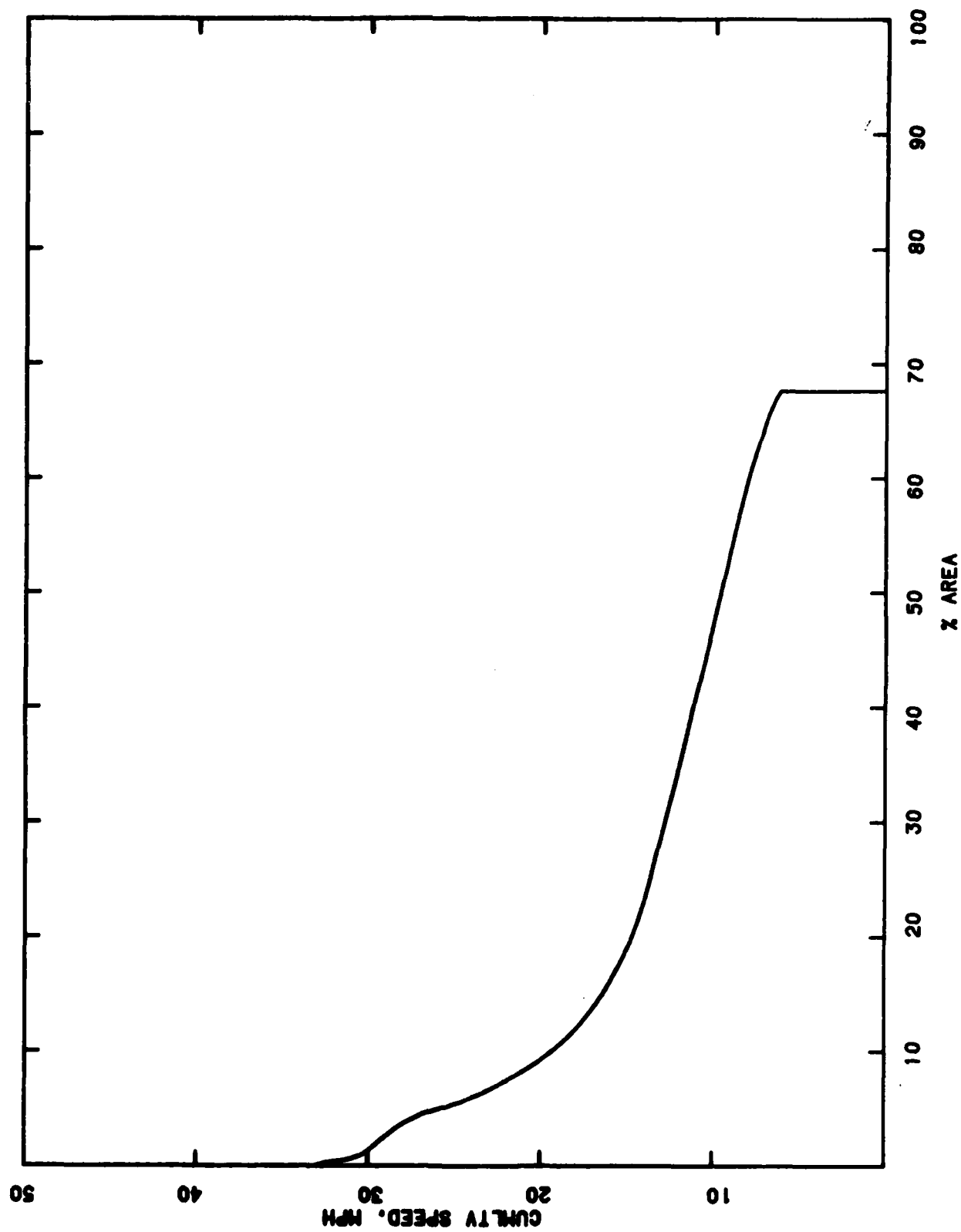
PERFORMANCE OF M814WW IN EUROPE1 DRY



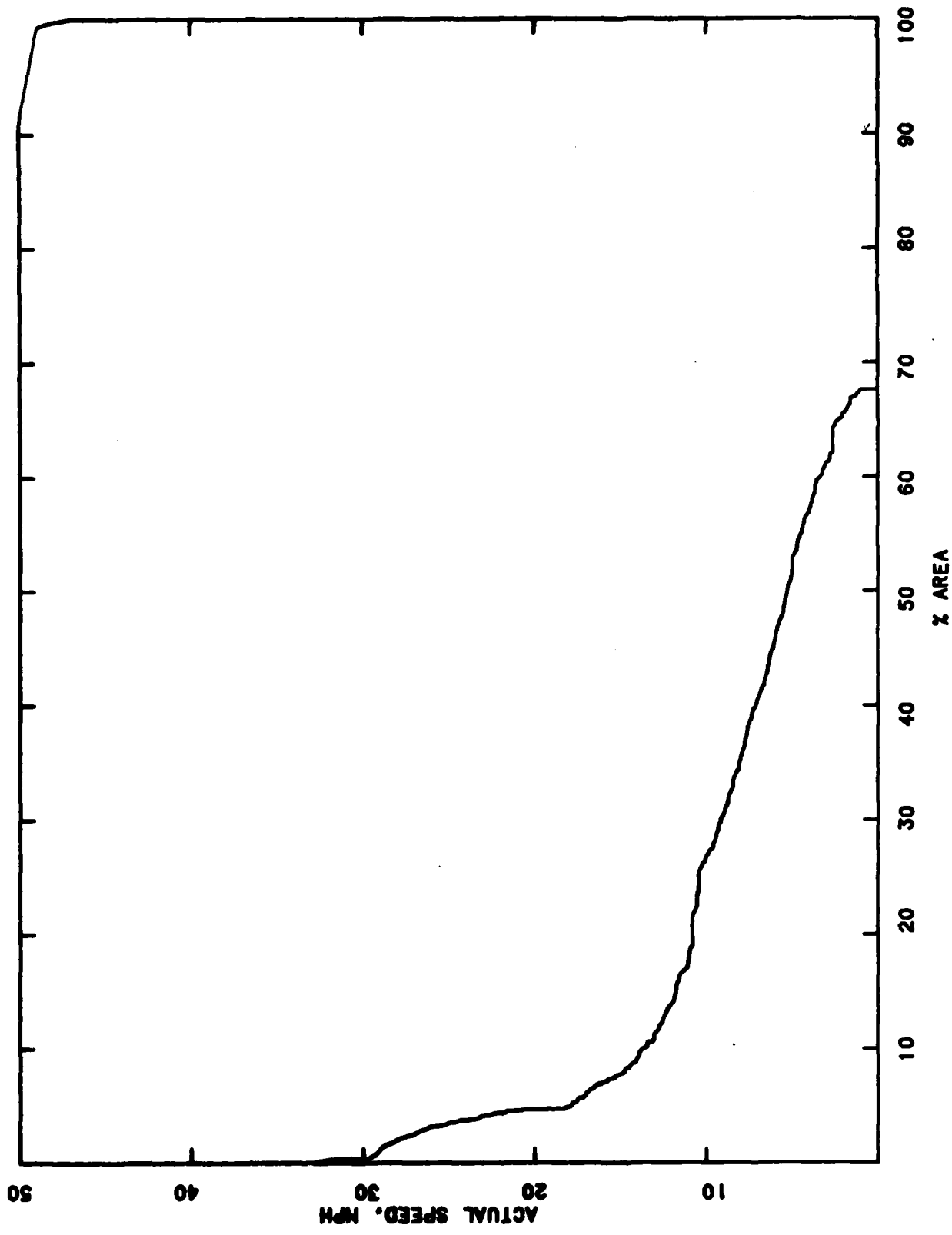
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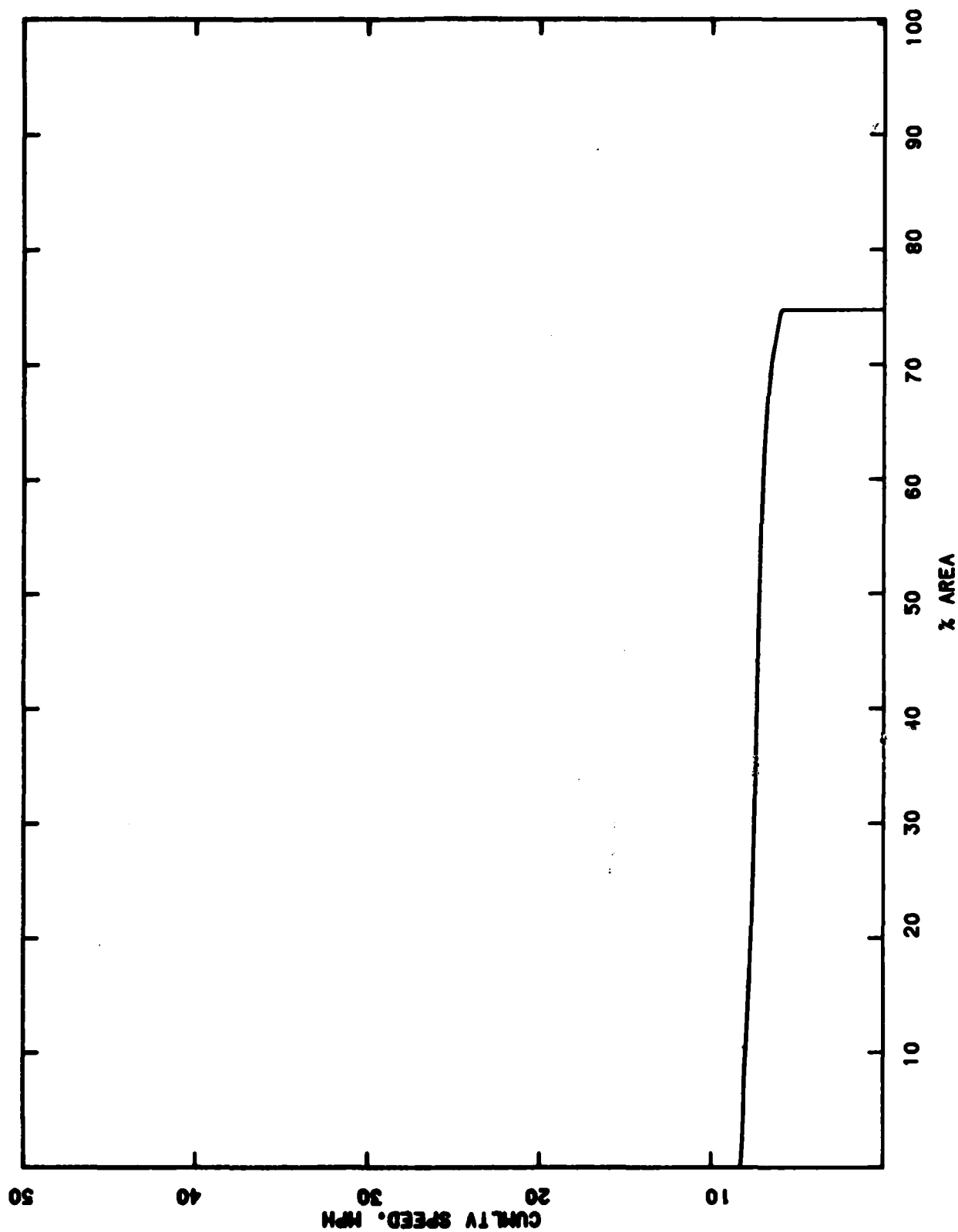
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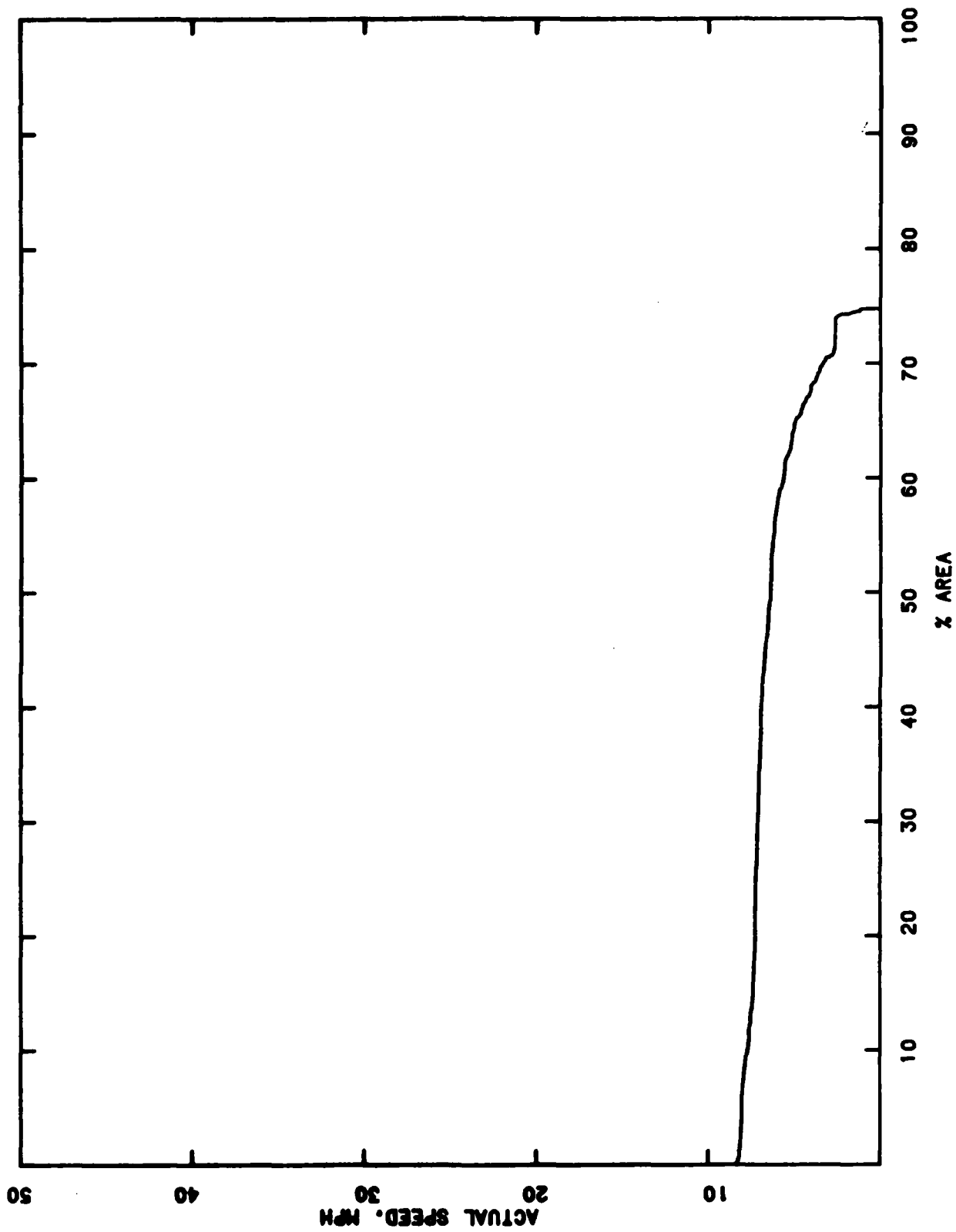
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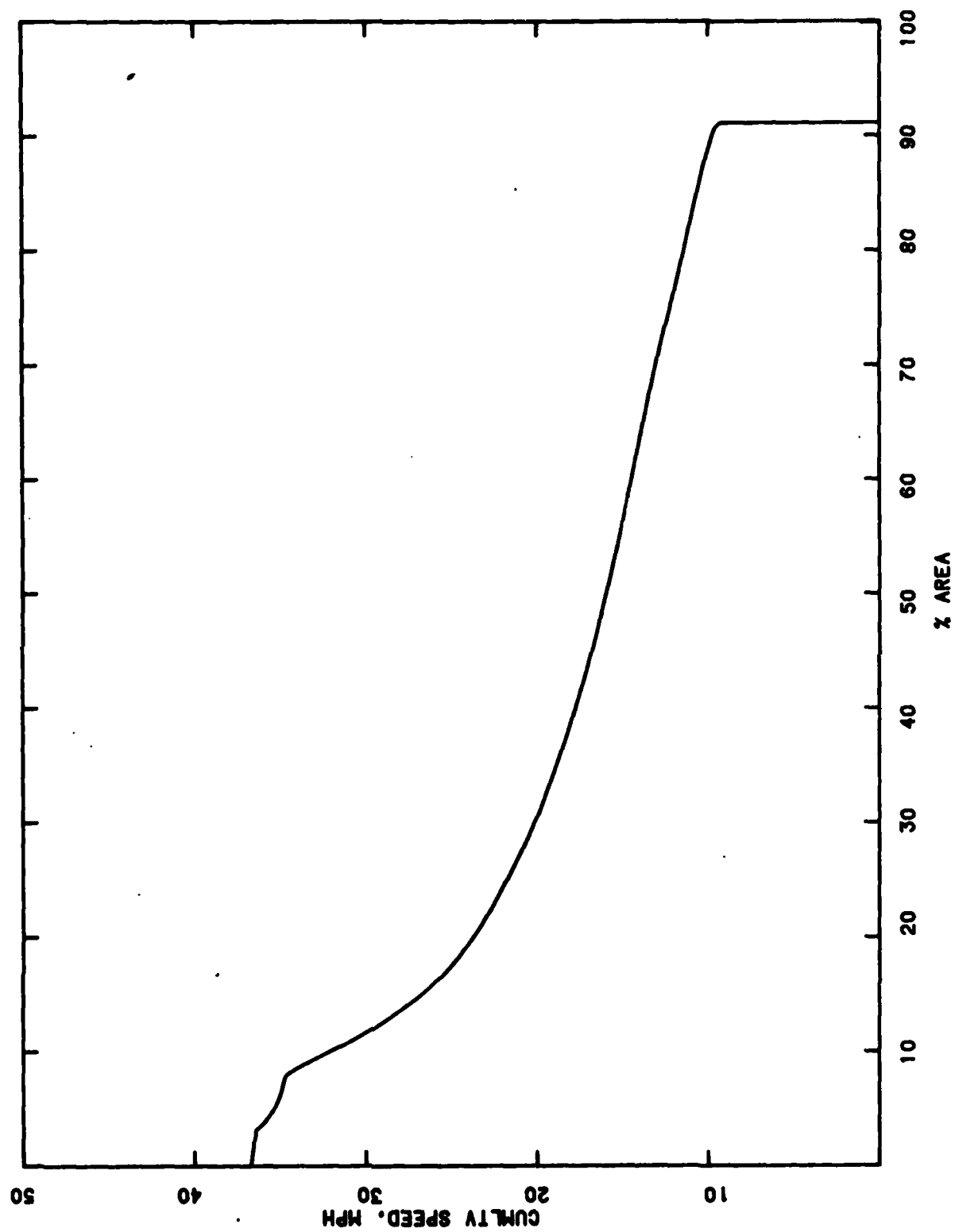
PERFORMANCE OF M814W IN EUROPE1 SNOW



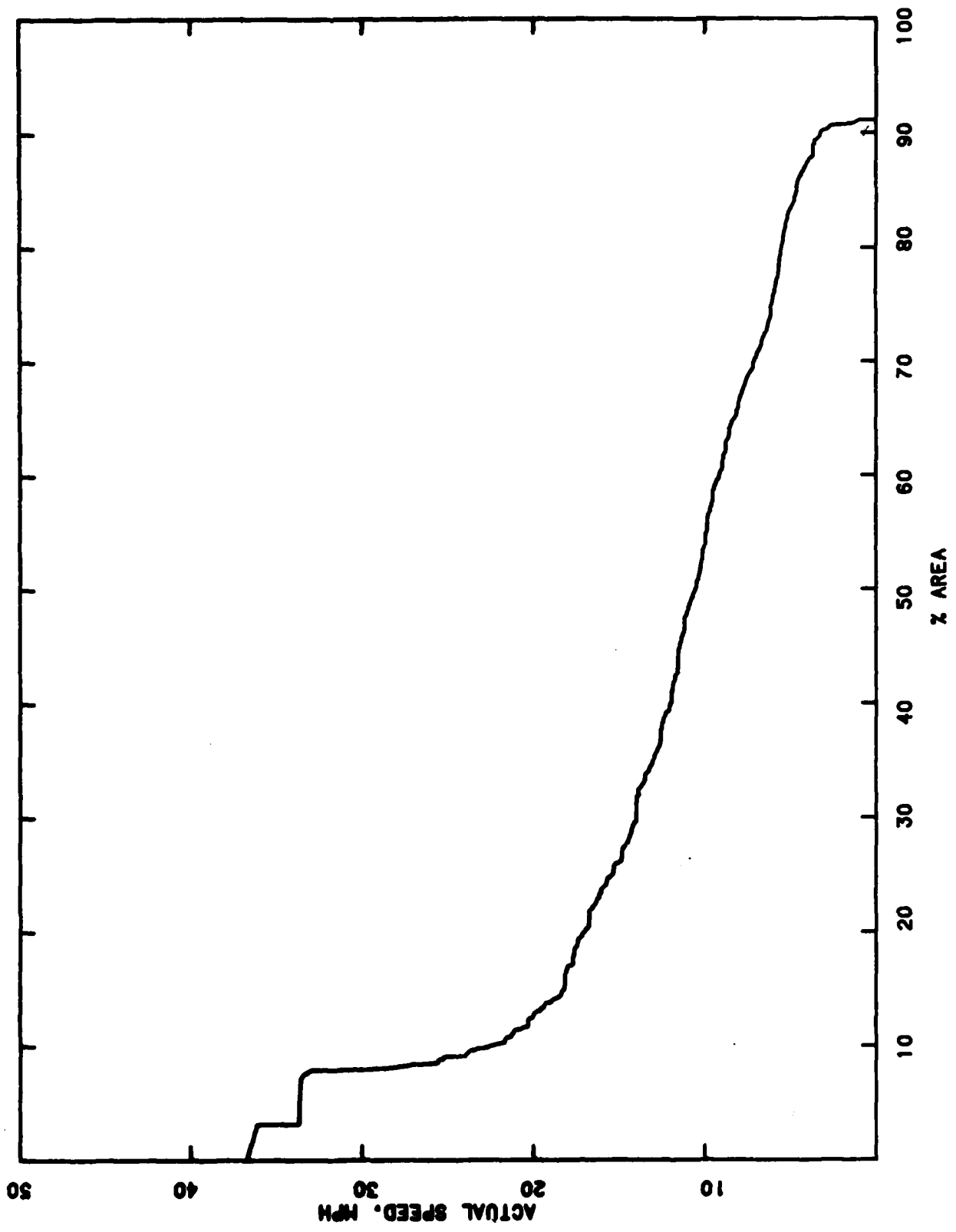
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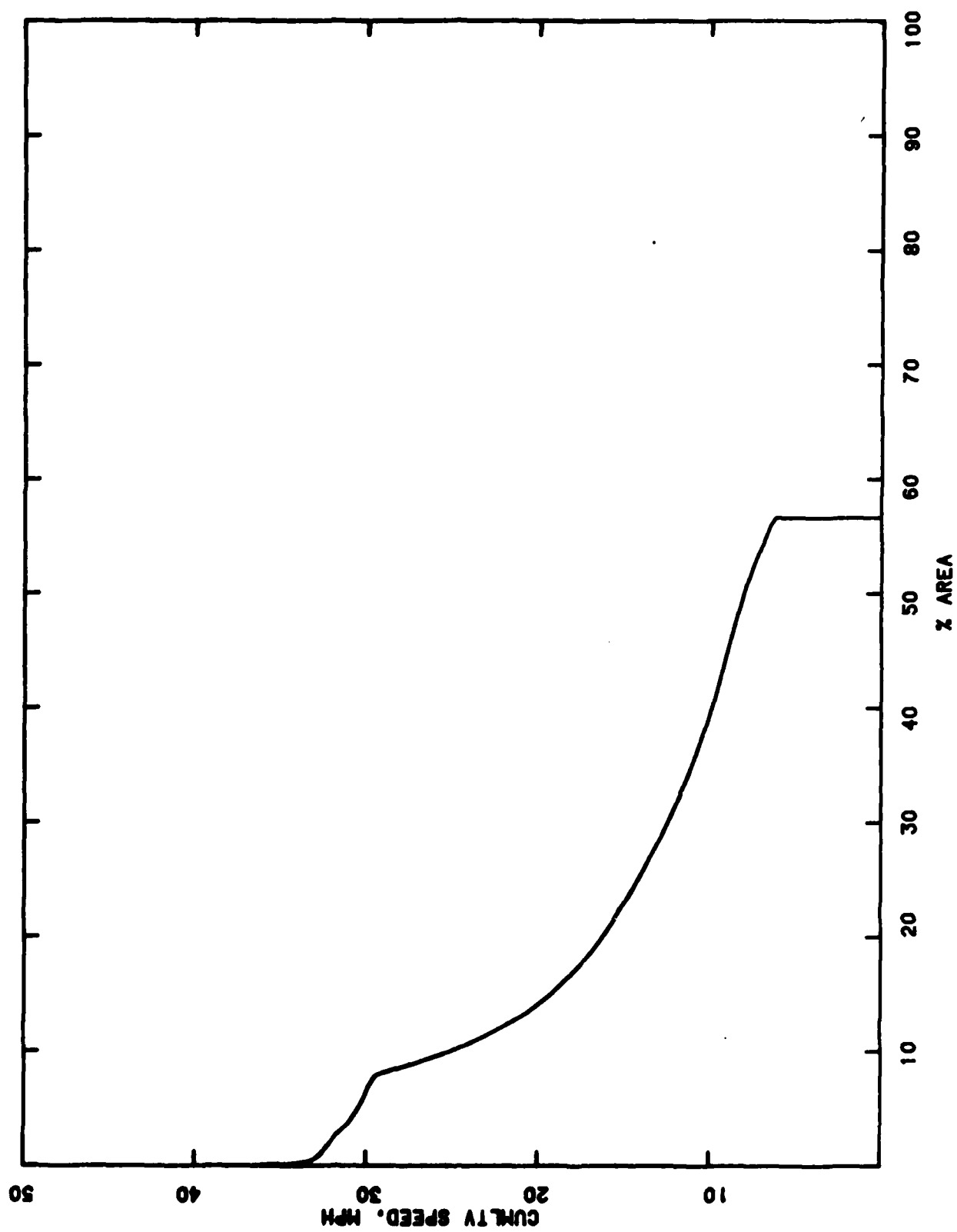
PERFORMANCE OF M814WW IN EUROPE2 DRY



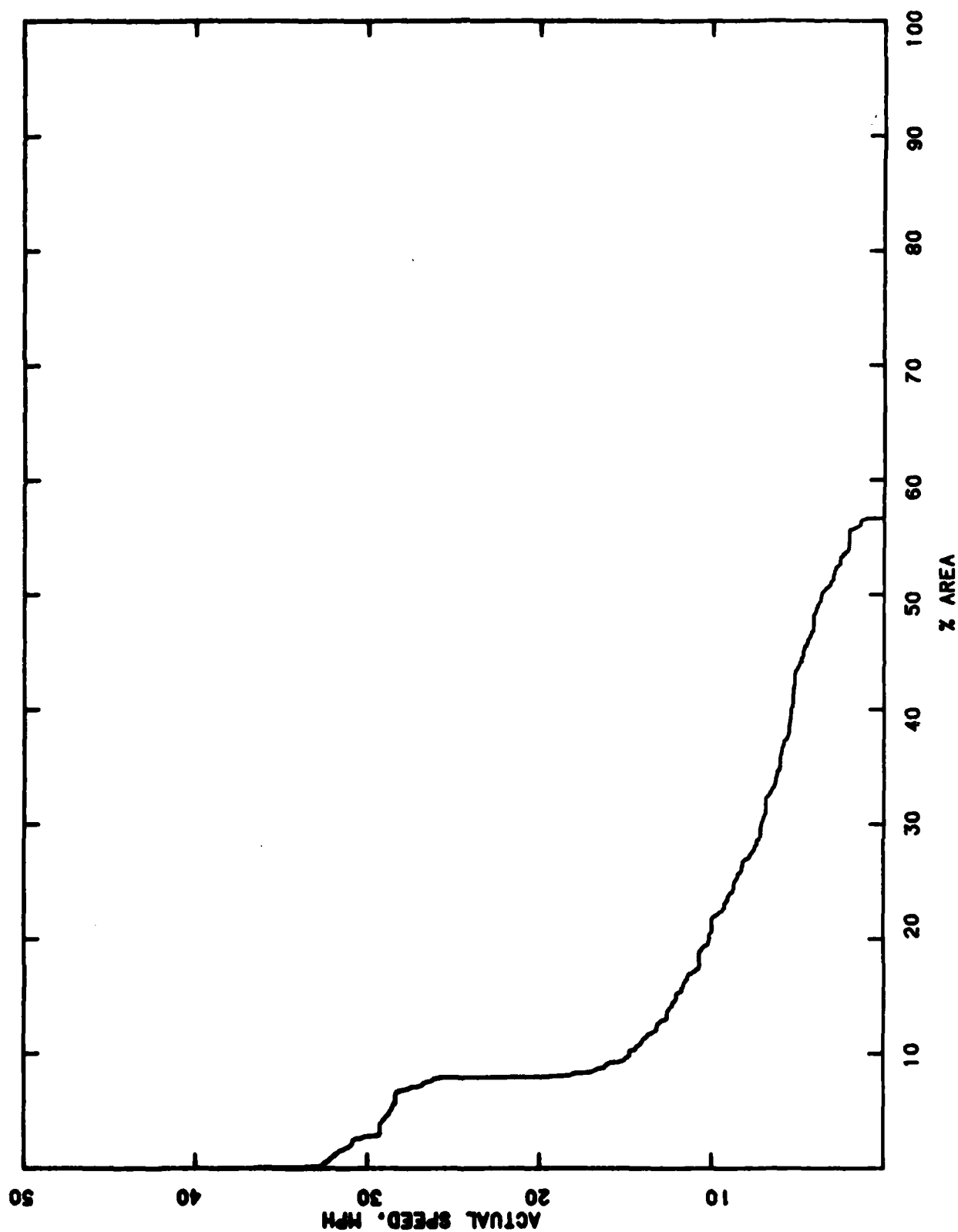
PERFORMANCE OF MB14W IN EUROPE2 DRY



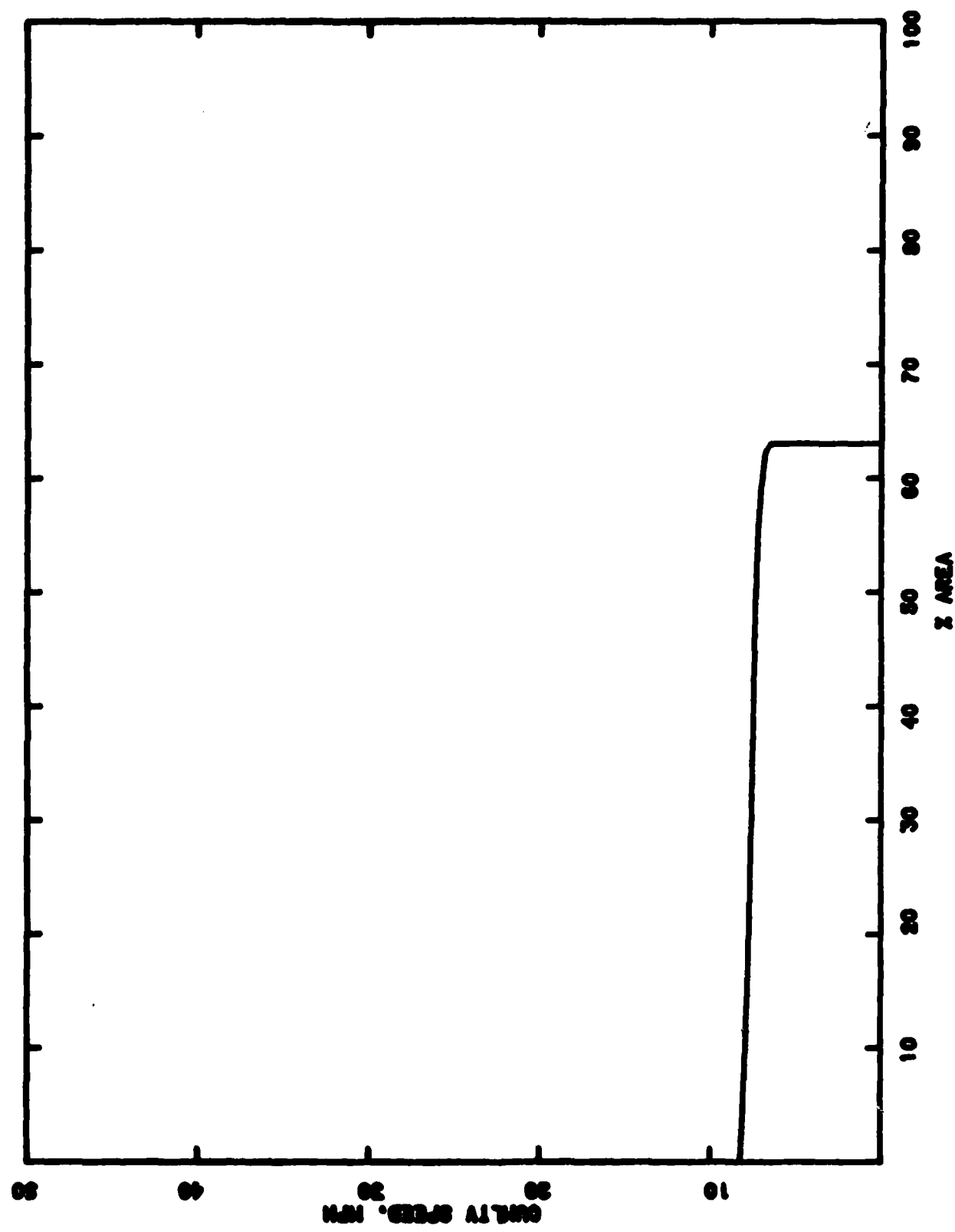
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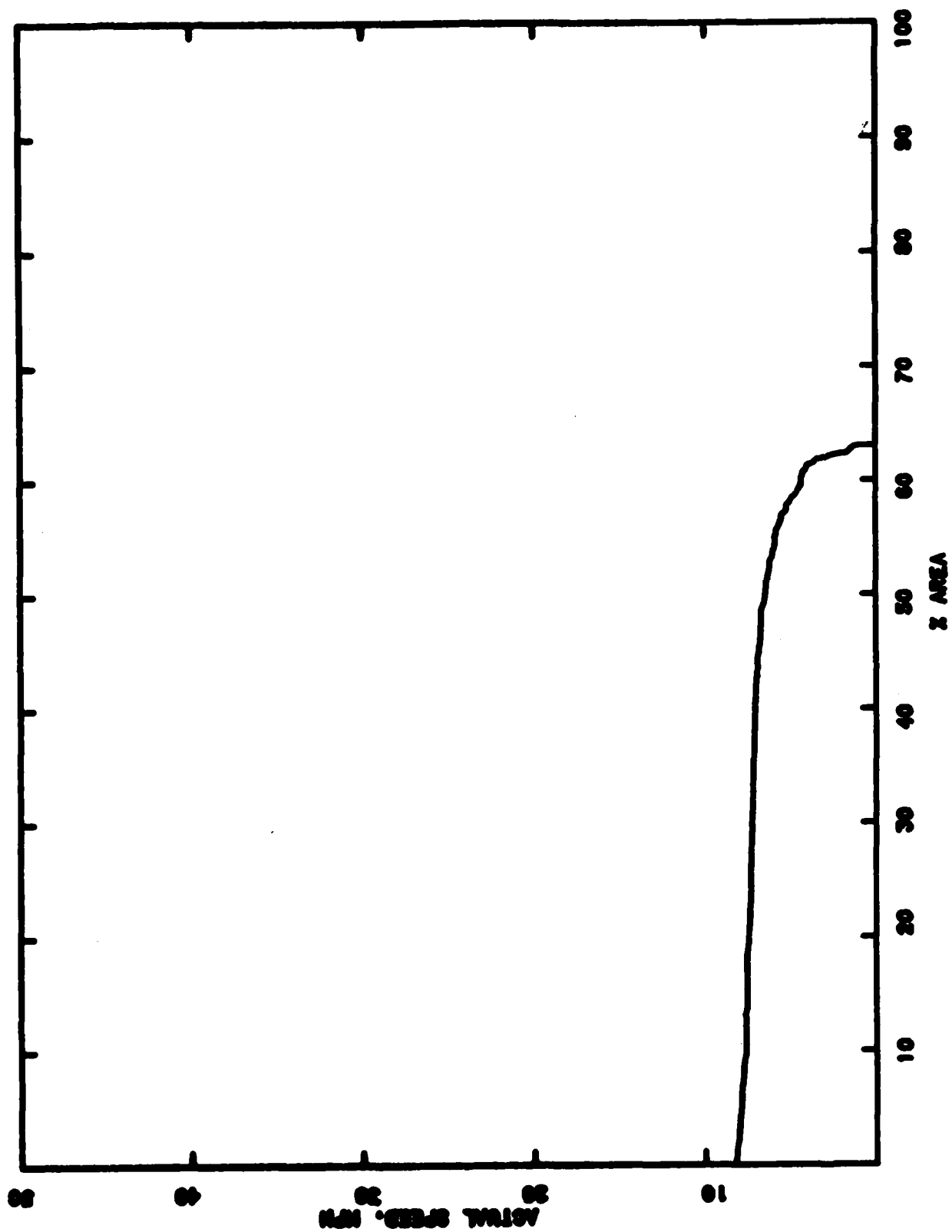
PERFORMANCE OF M814WW IN EUROPE2 WET



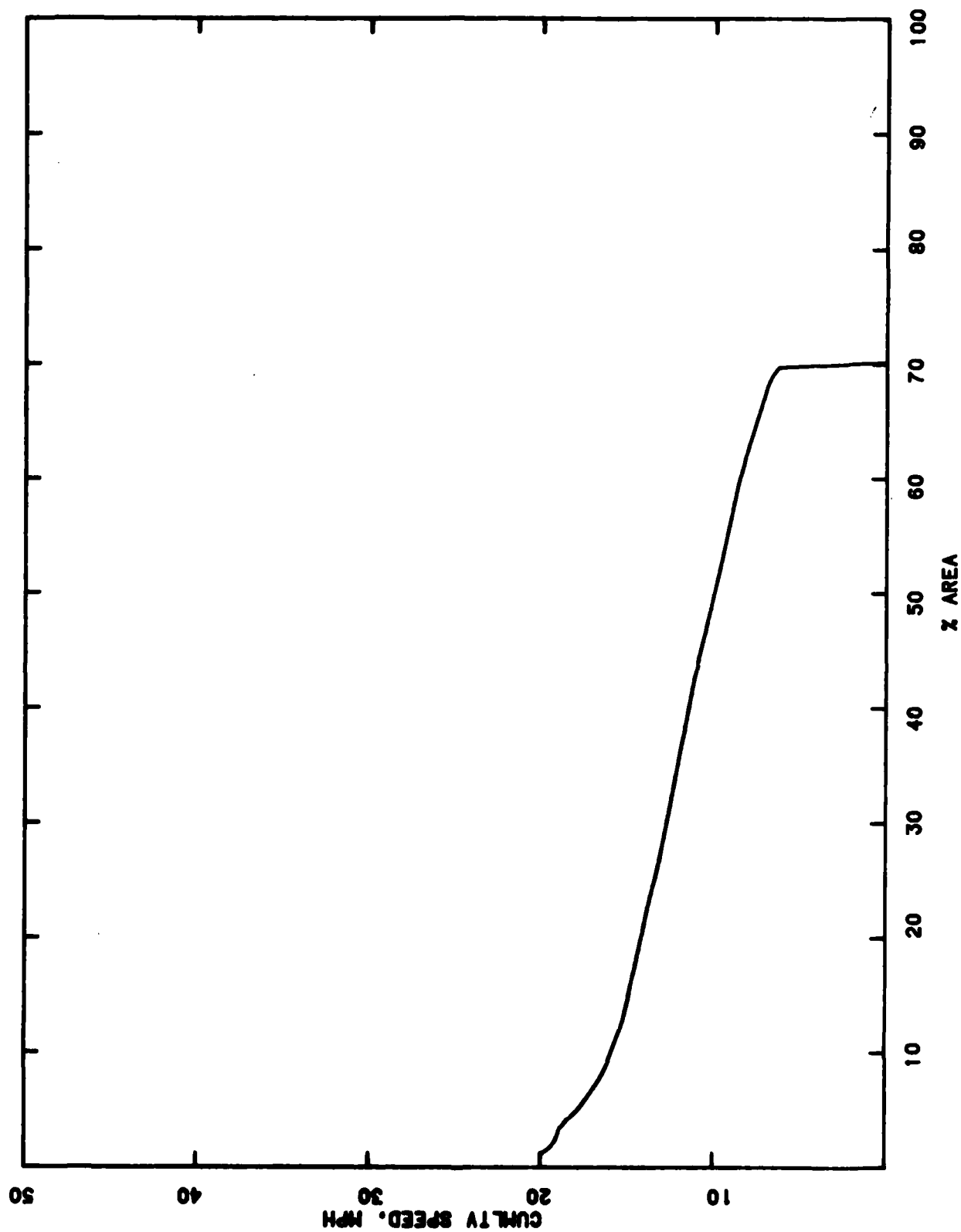
PERFORMANCE OF M814W IN EUROPE2 SNOW



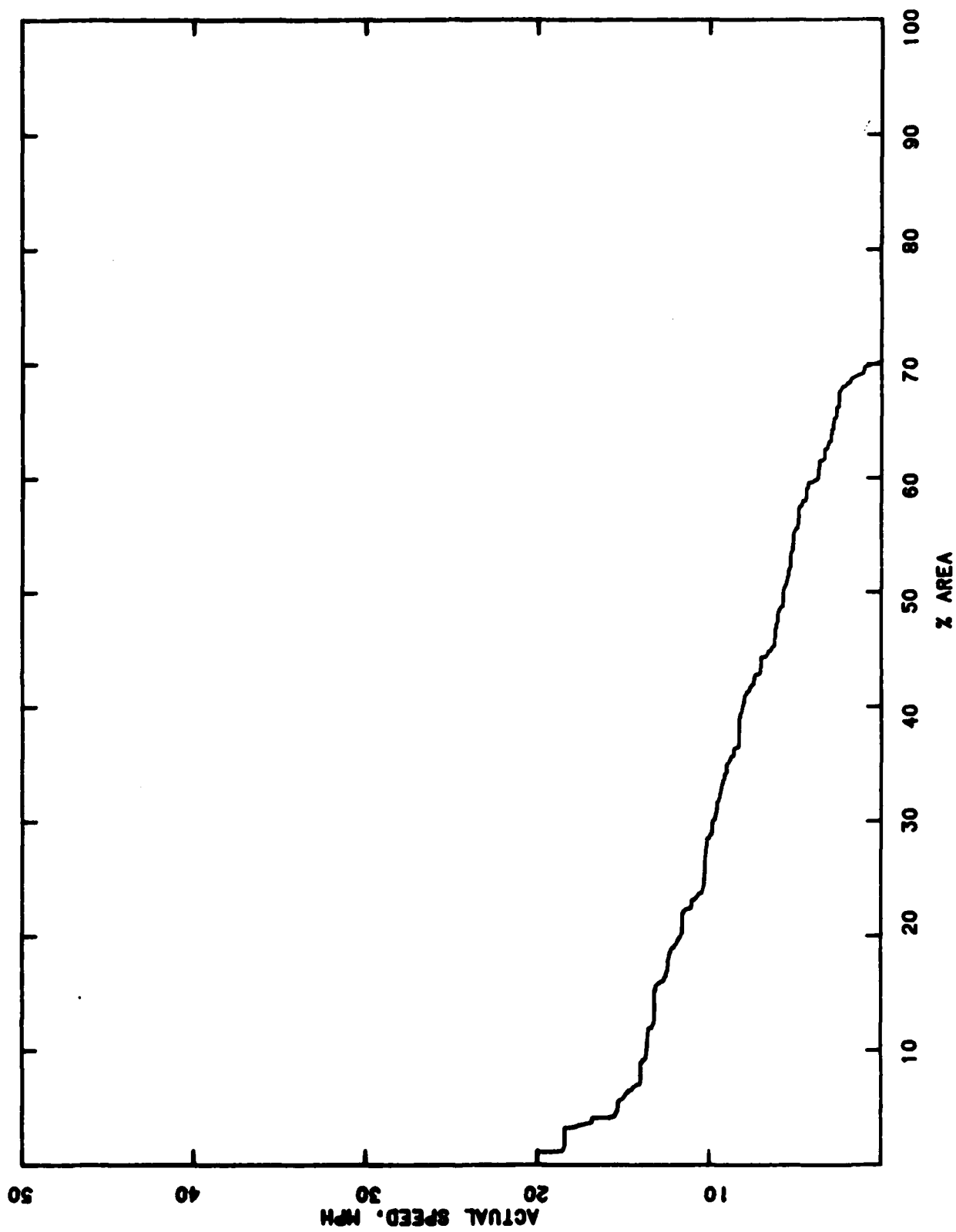
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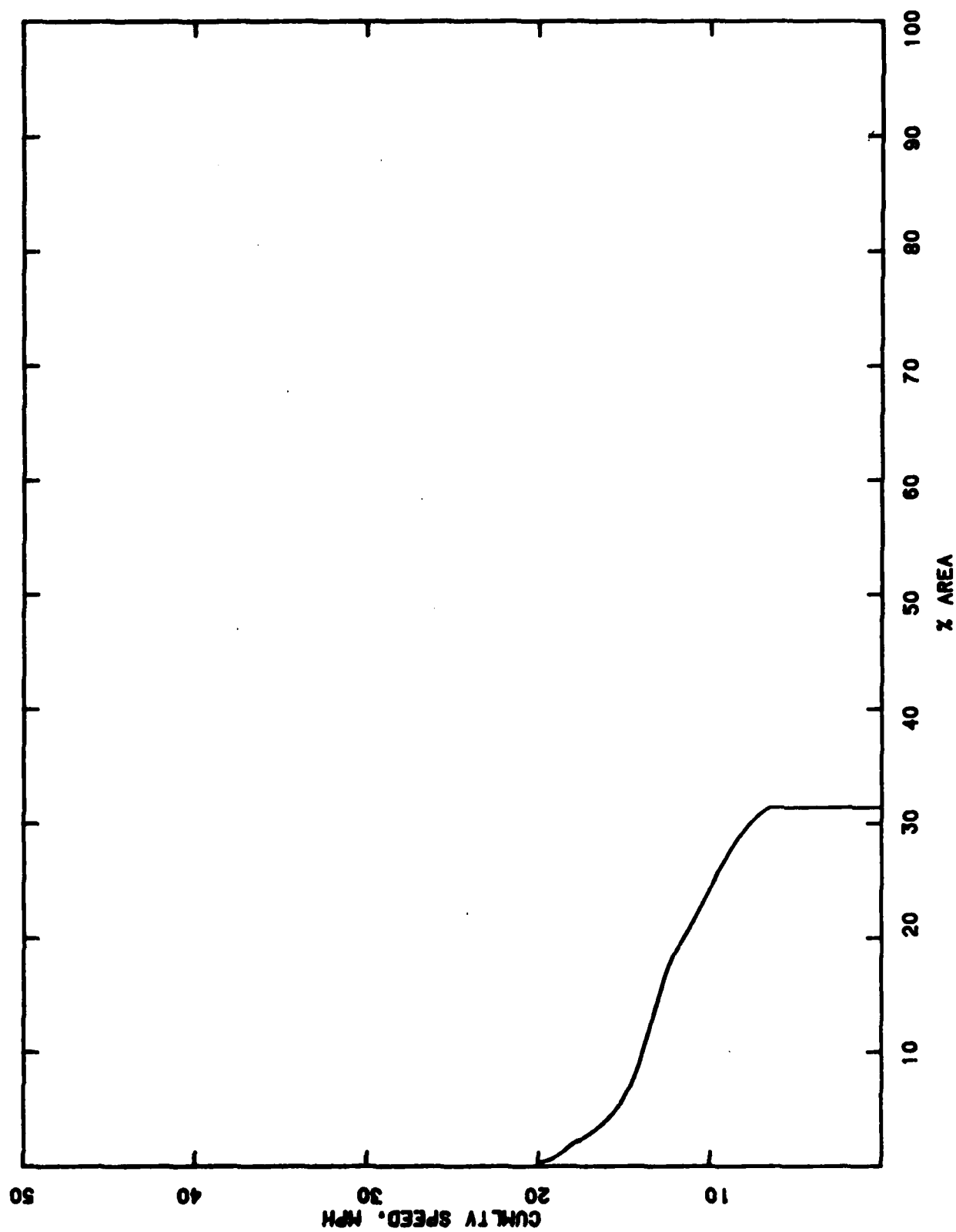
PERFORMANCE OF M814W IN MIDEAST1 DRY



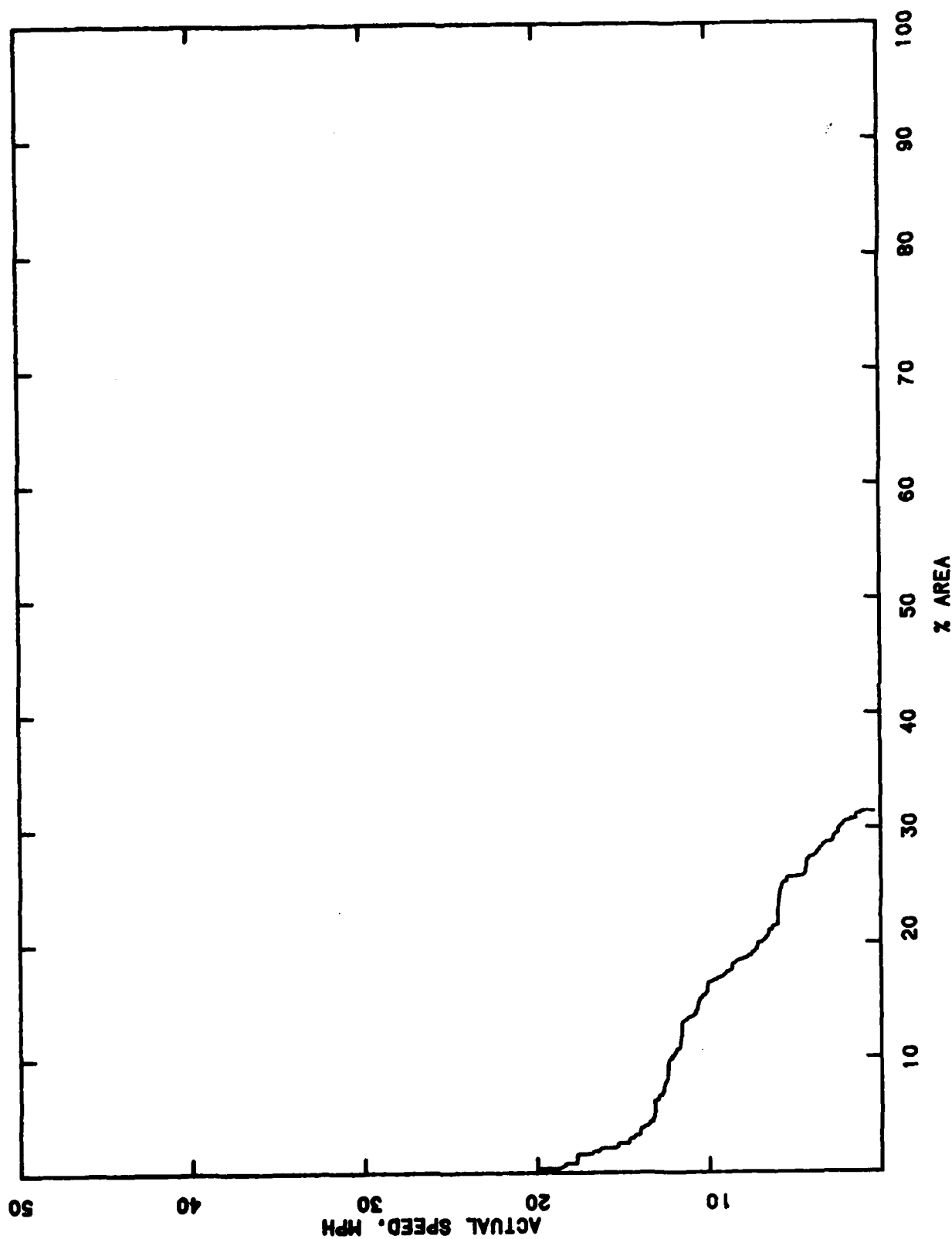
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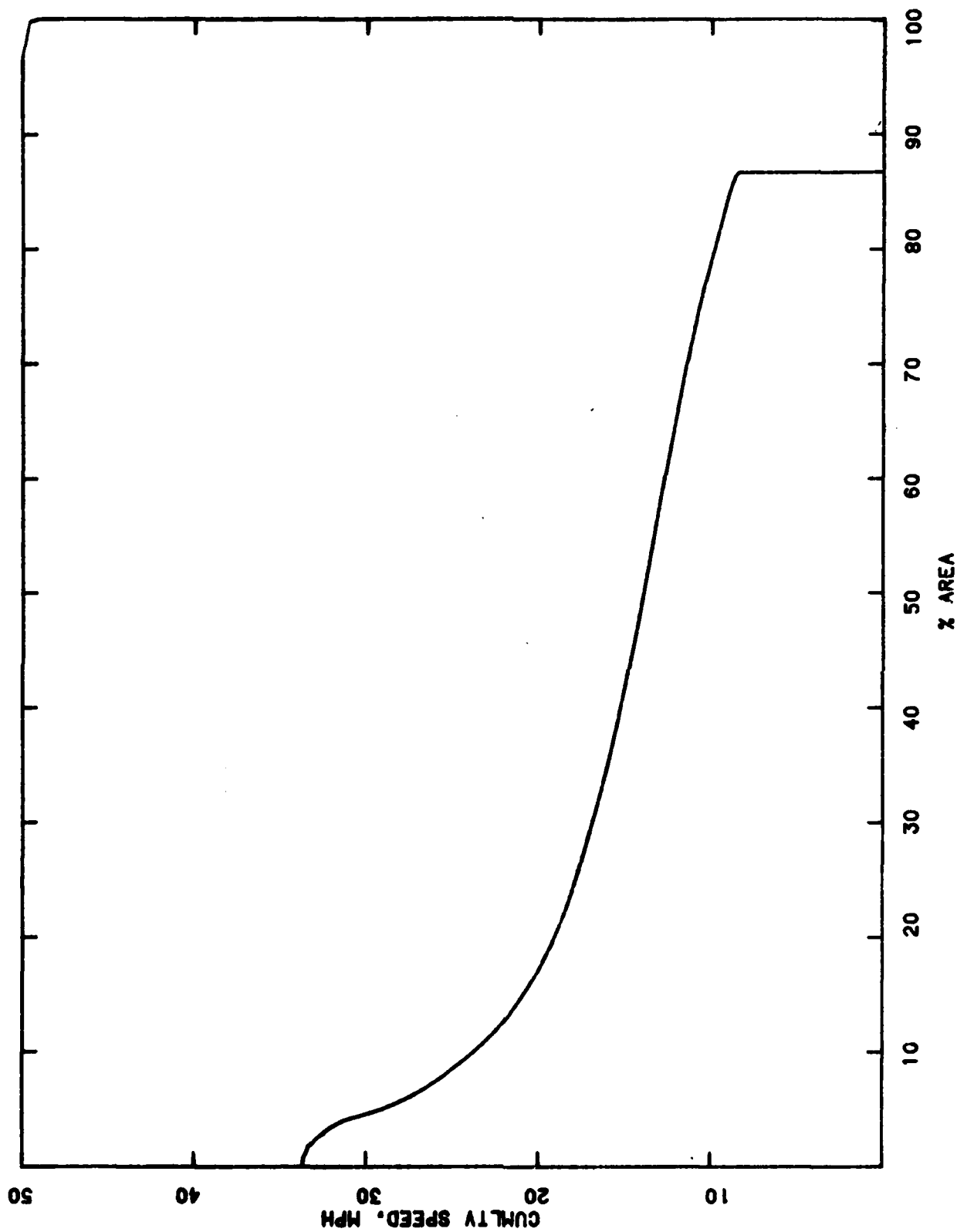
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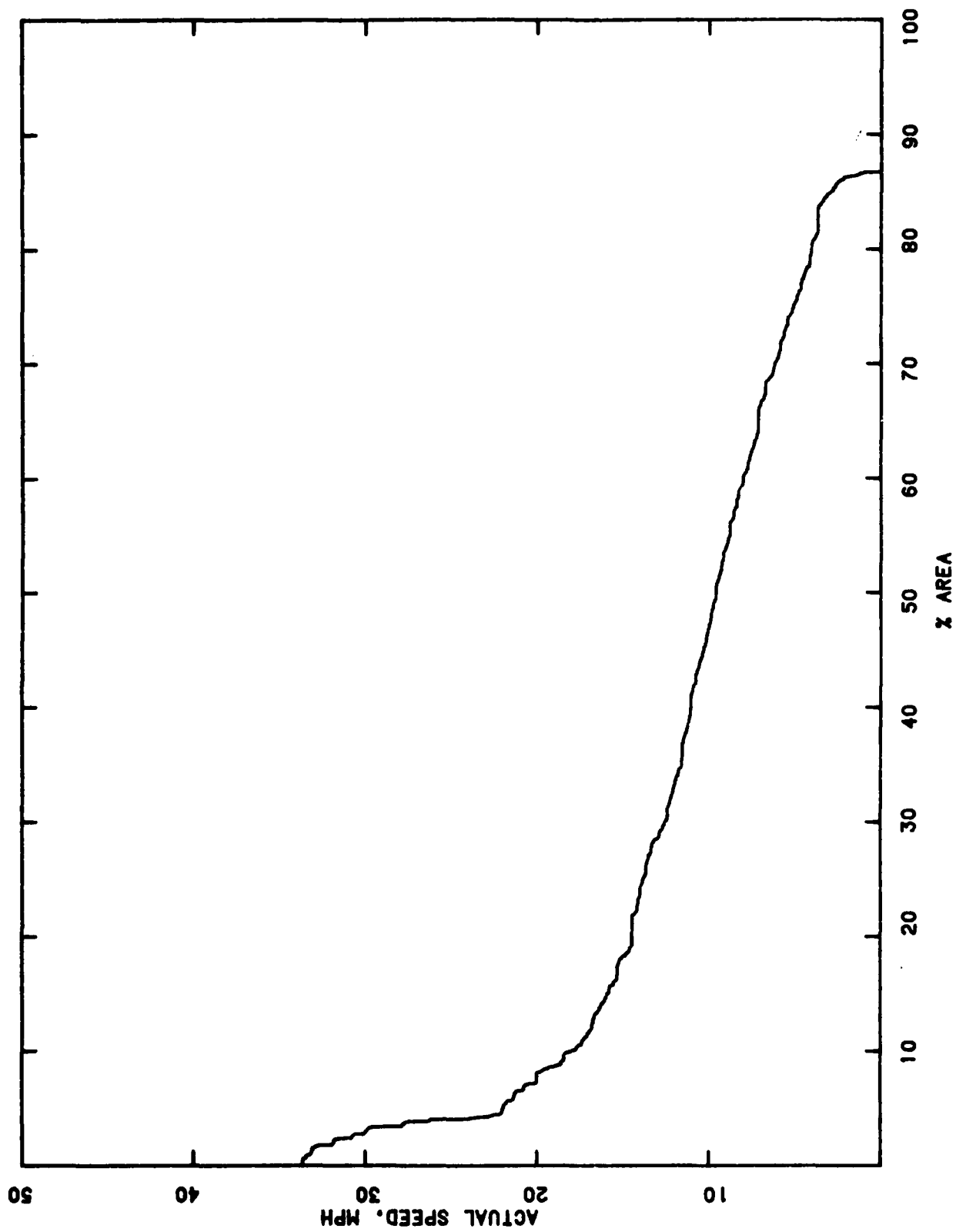
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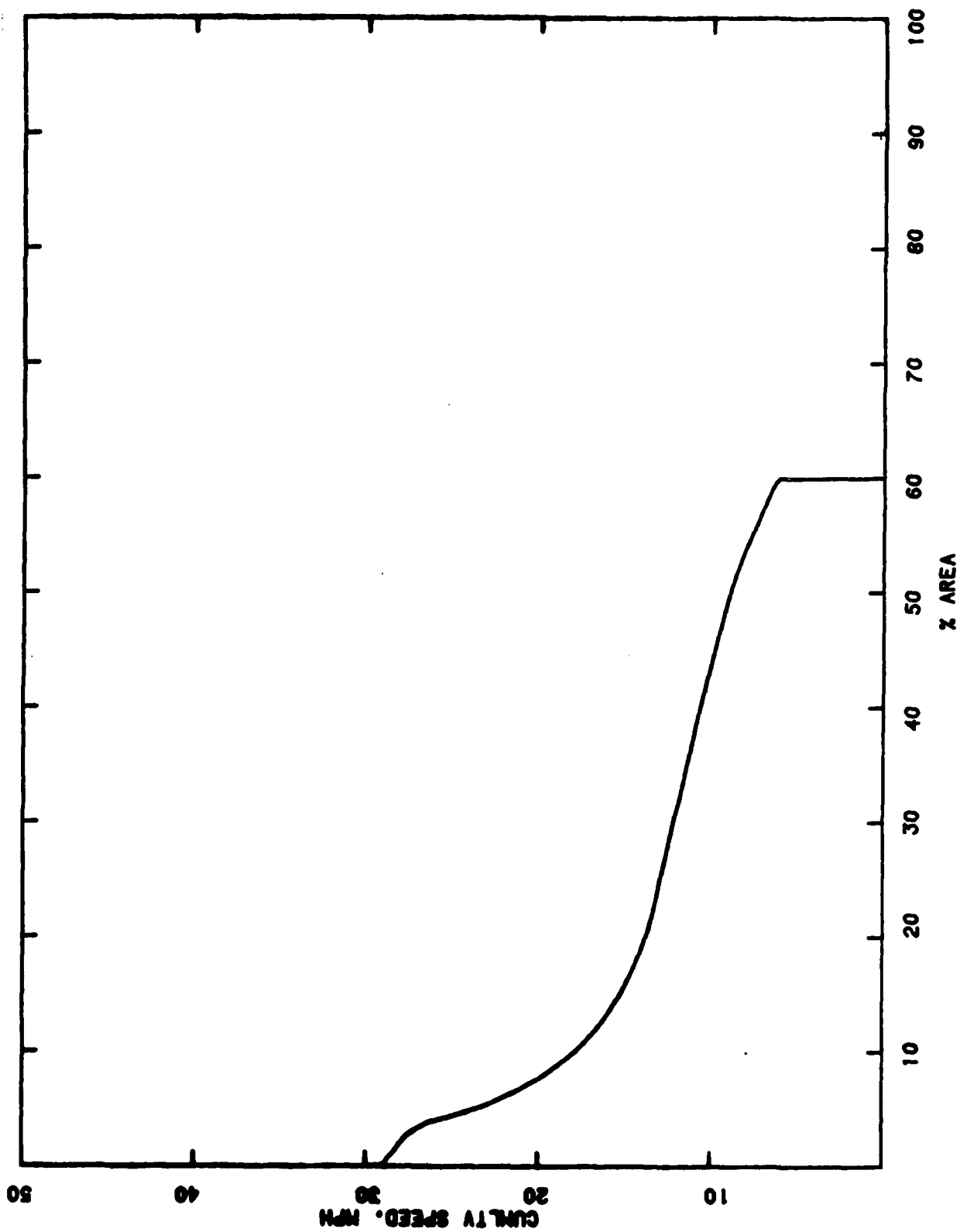
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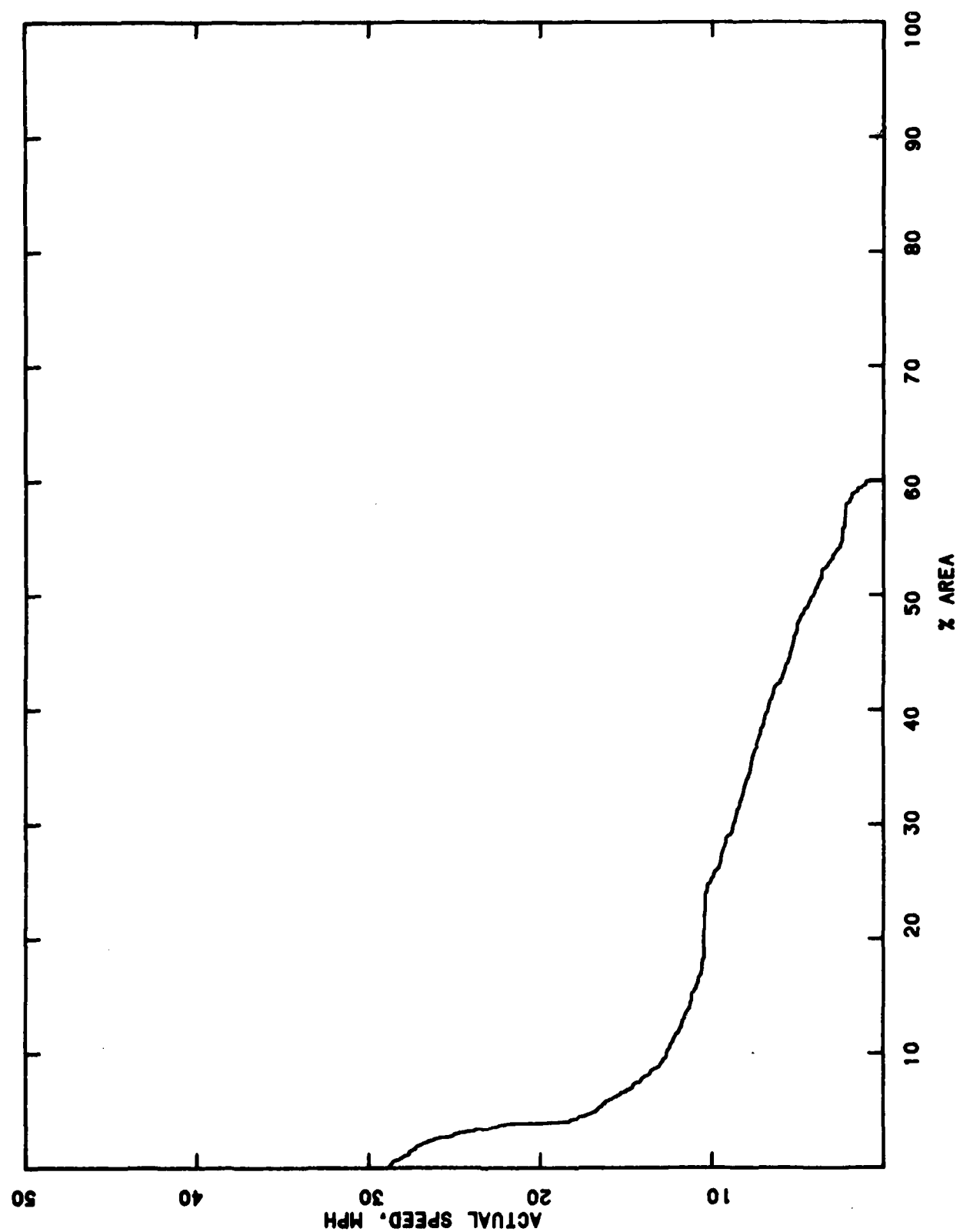
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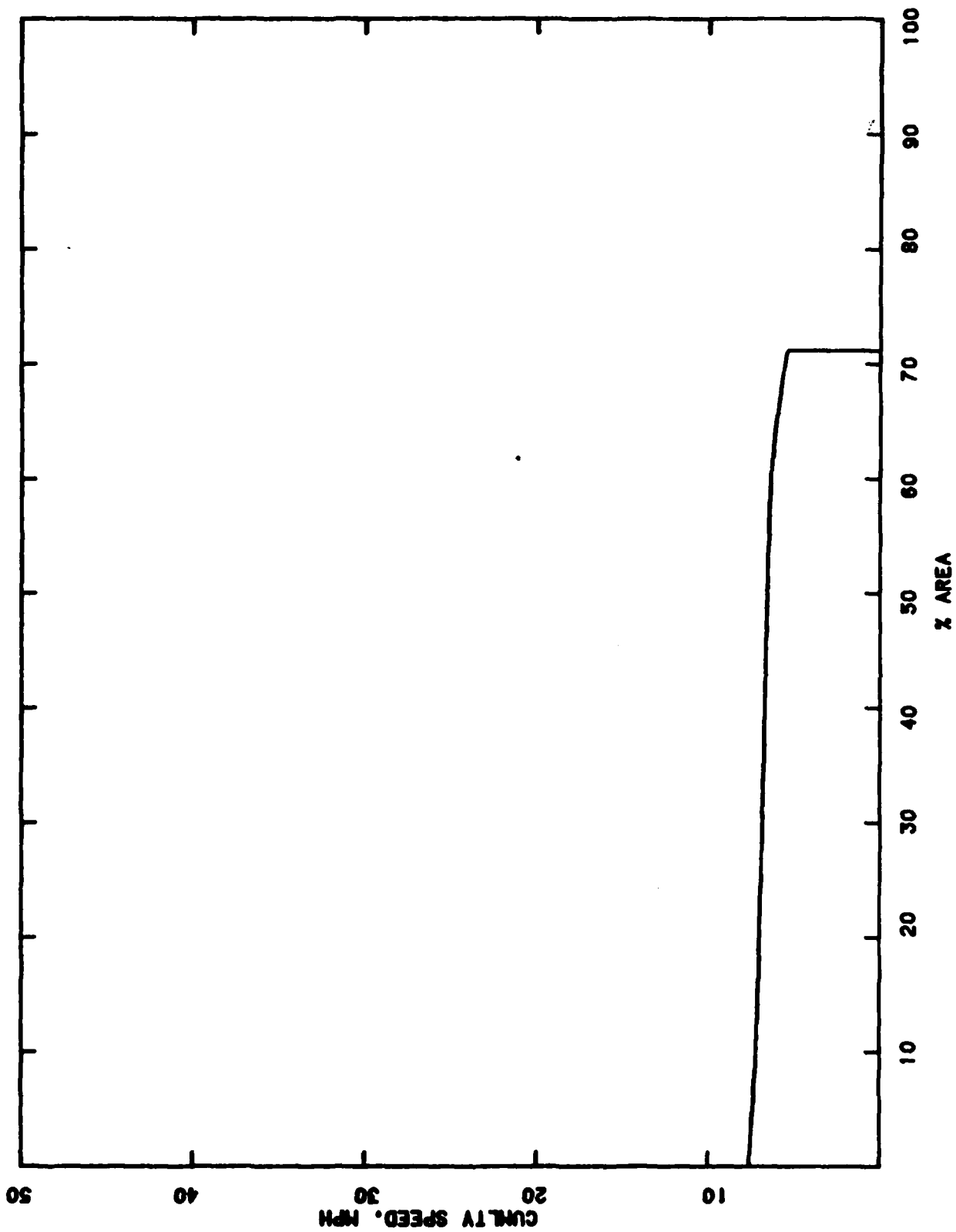
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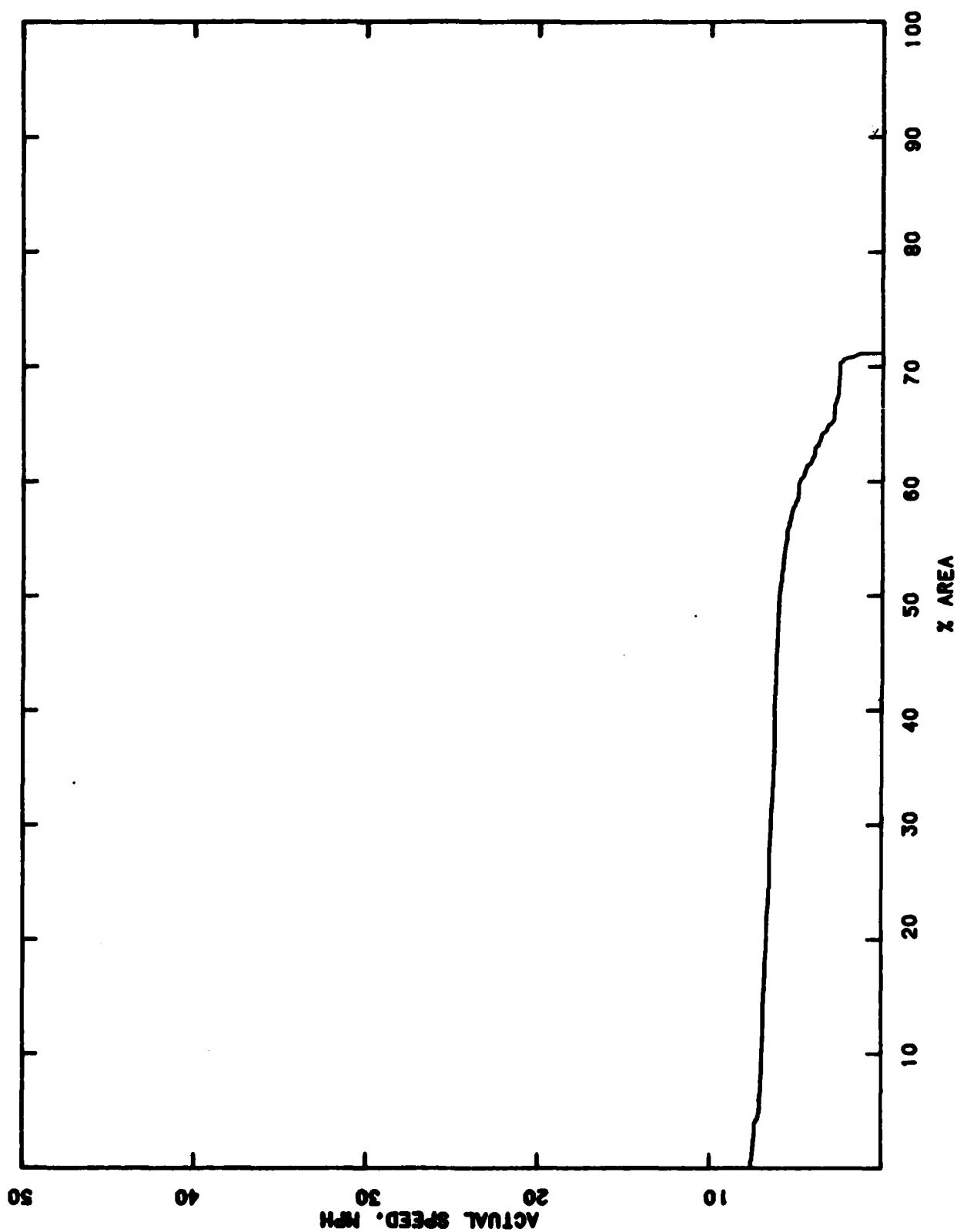
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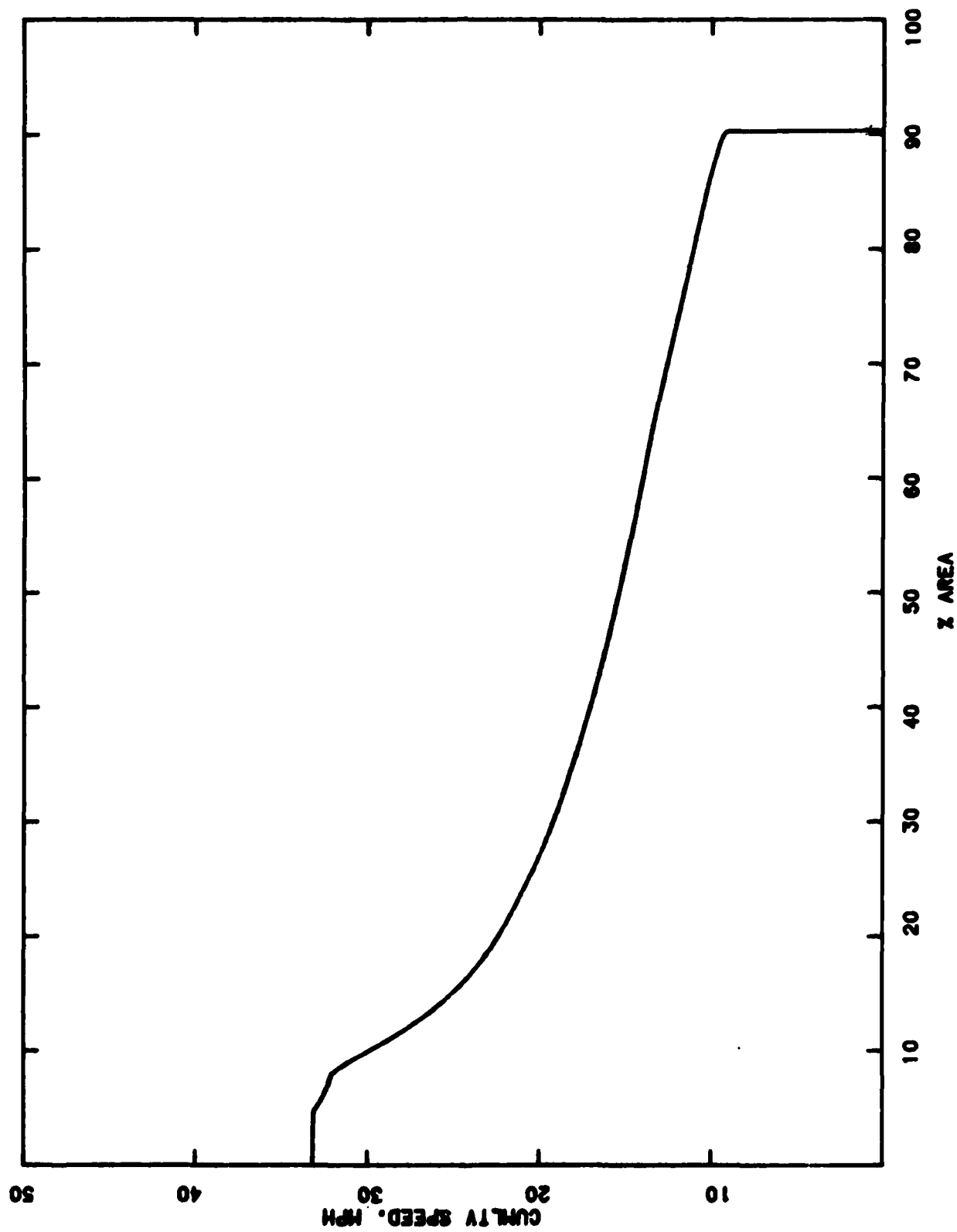
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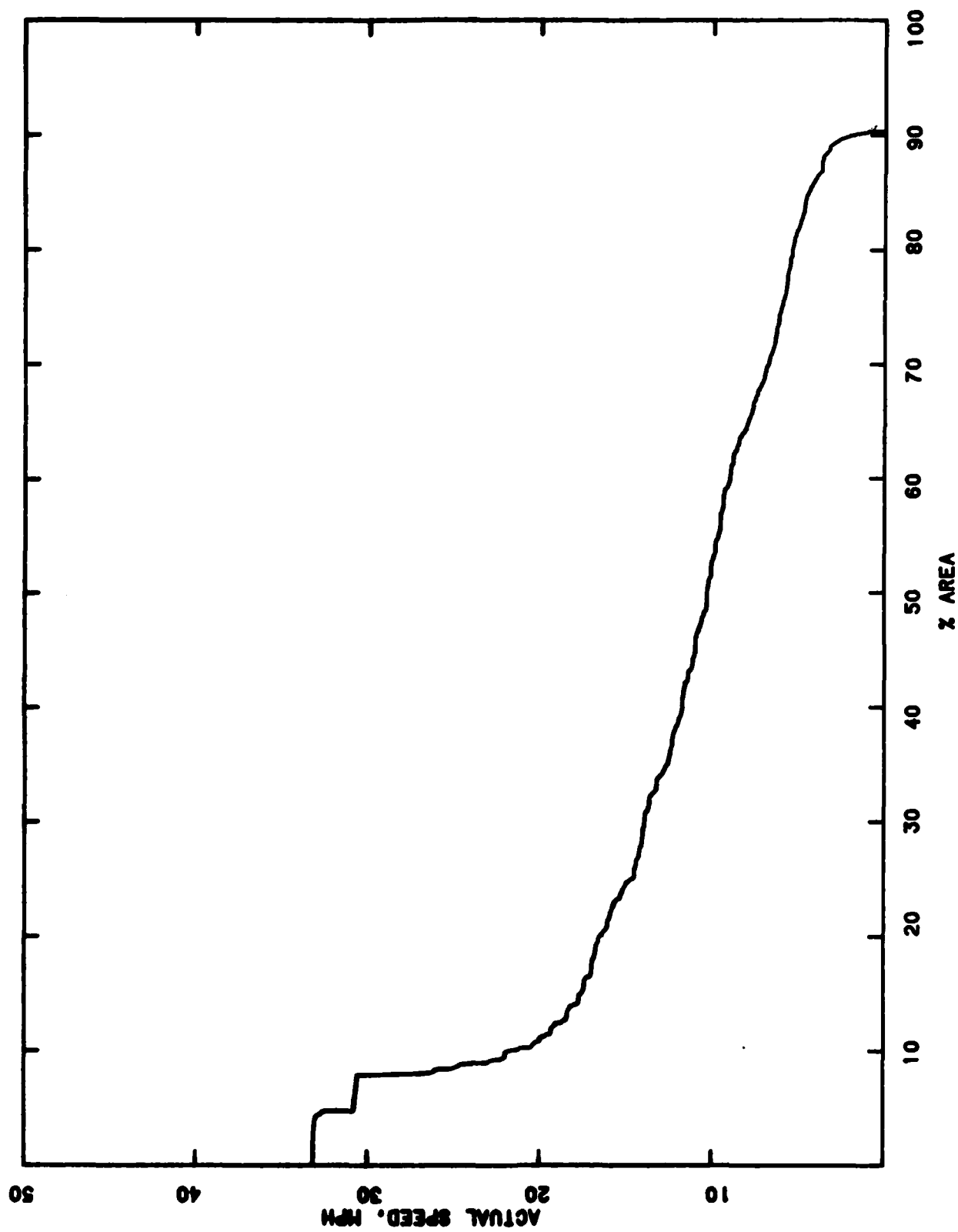
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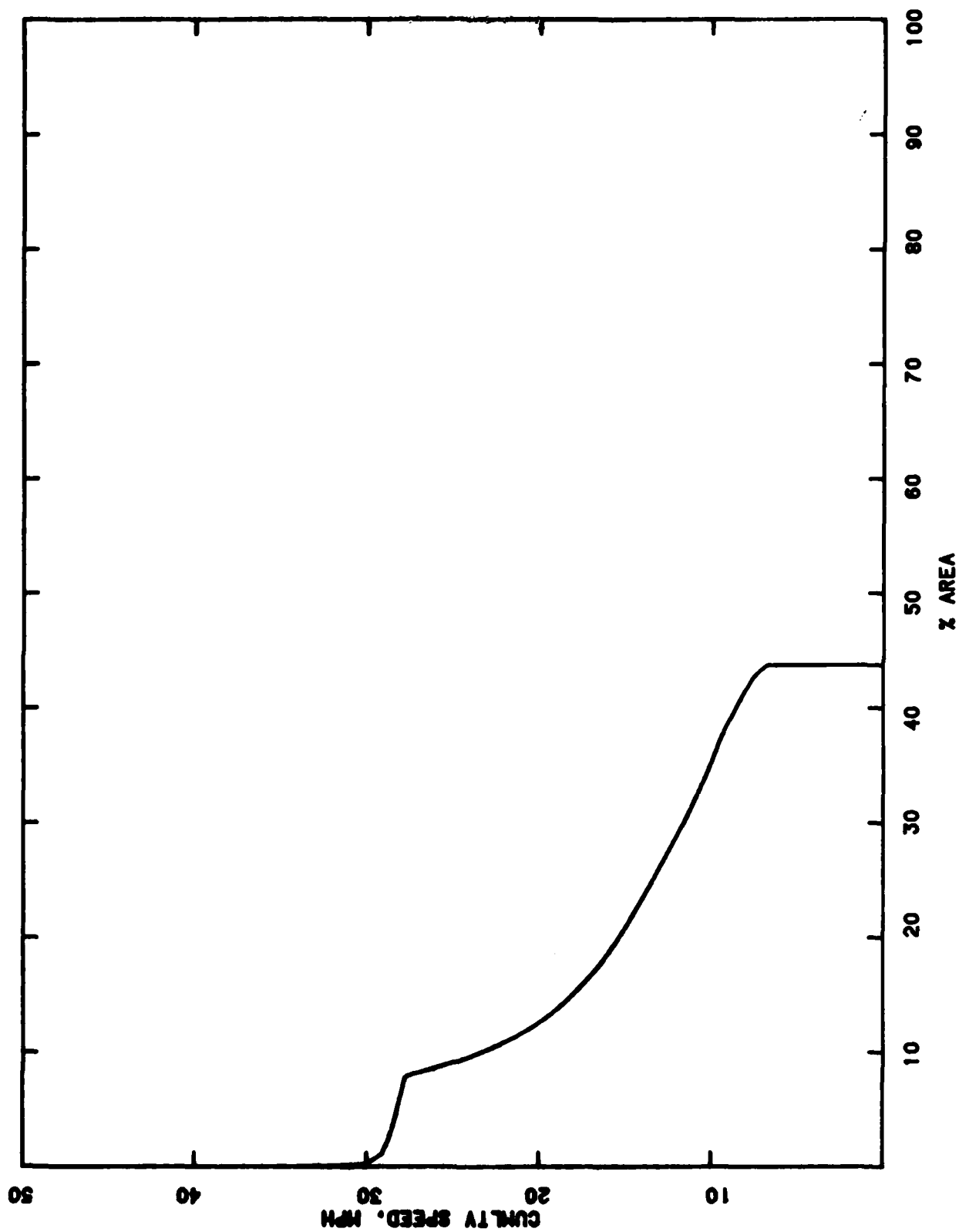
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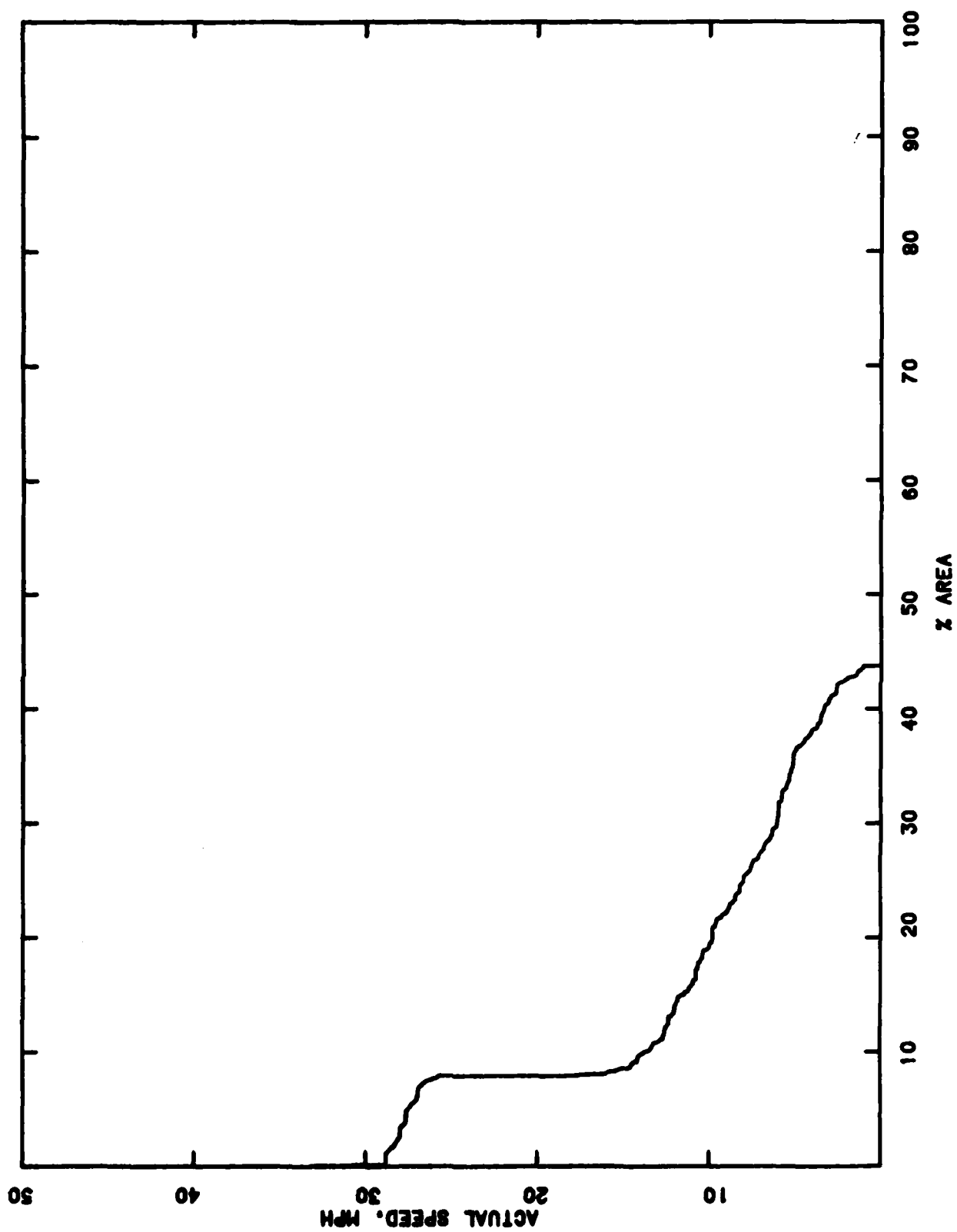
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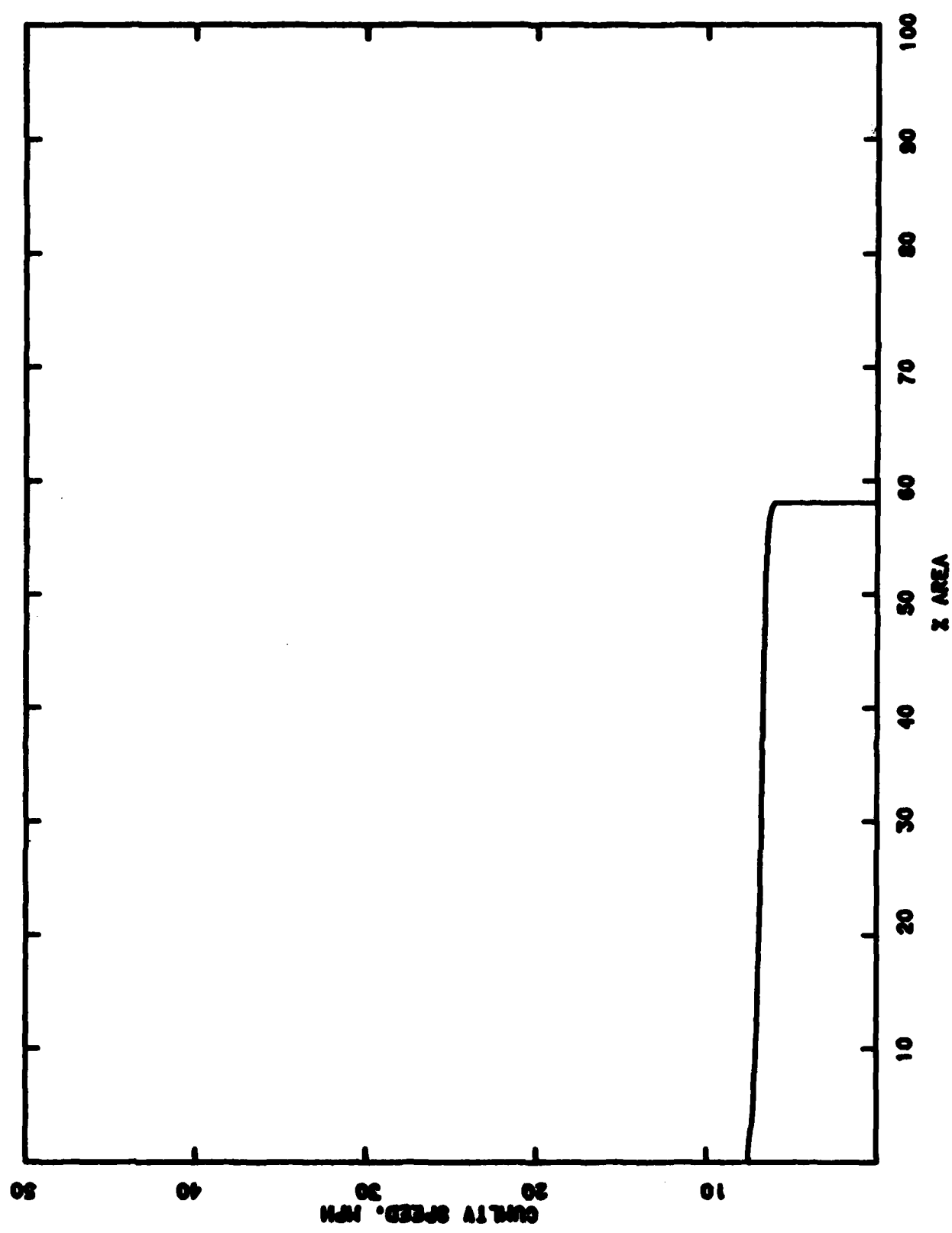
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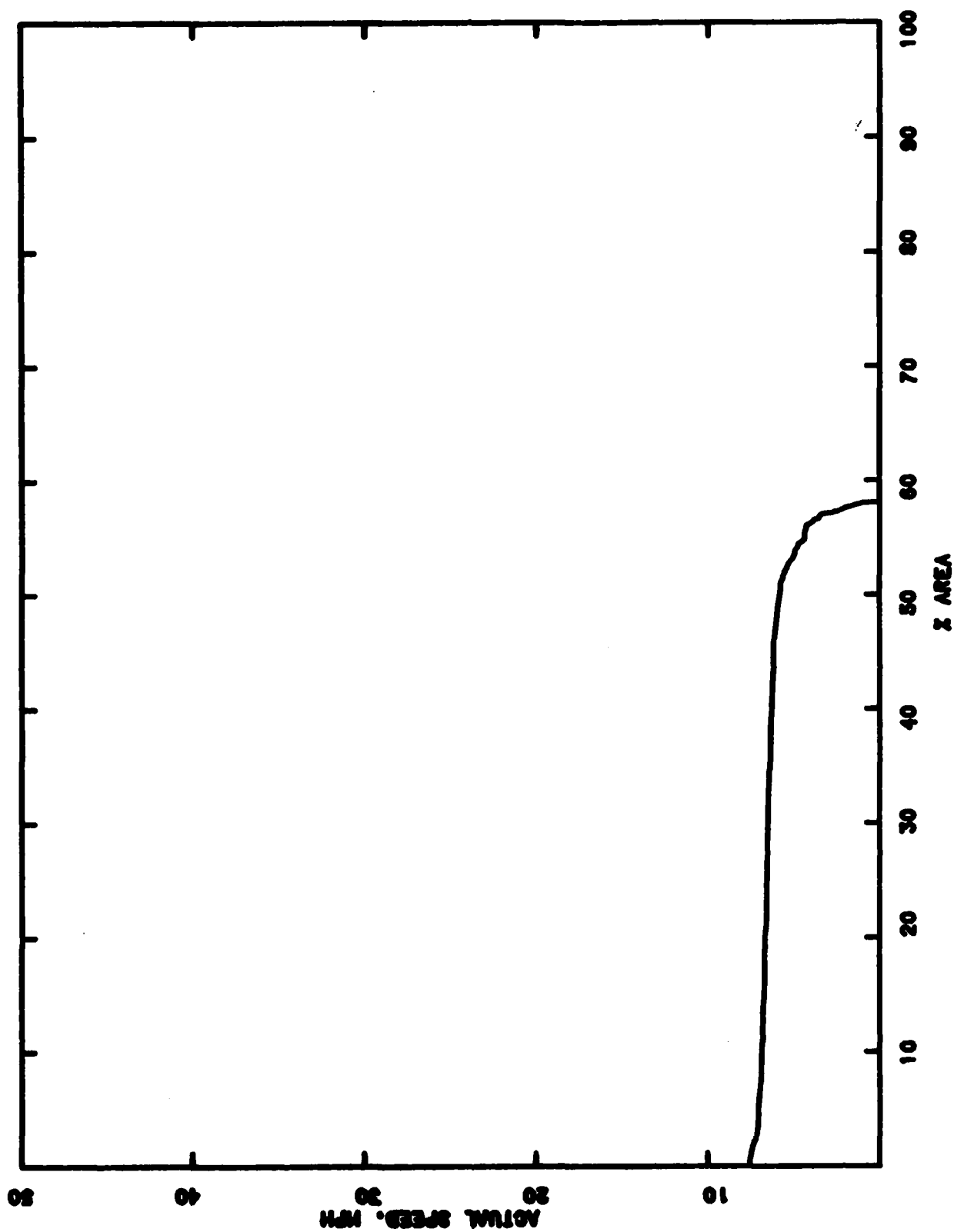
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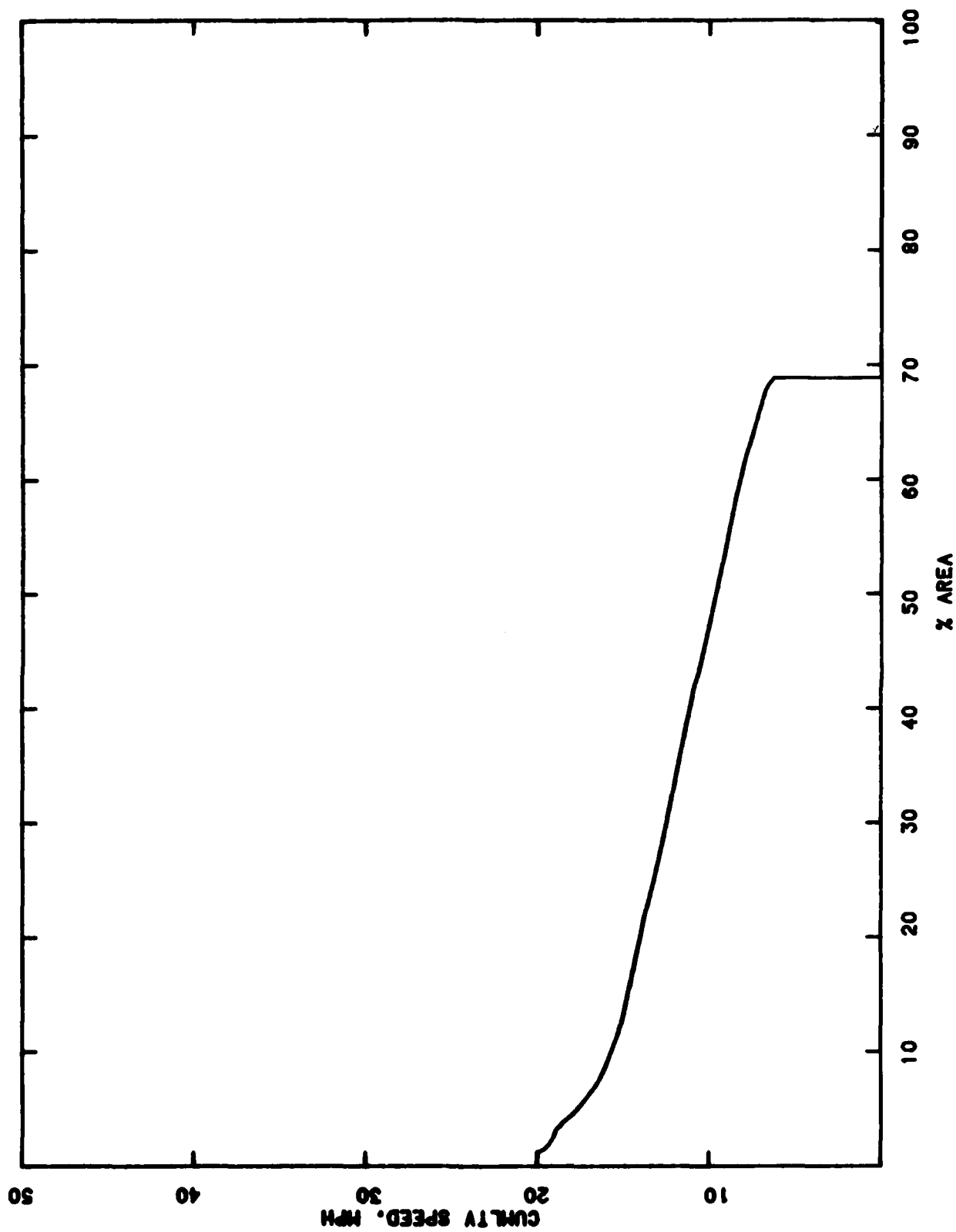
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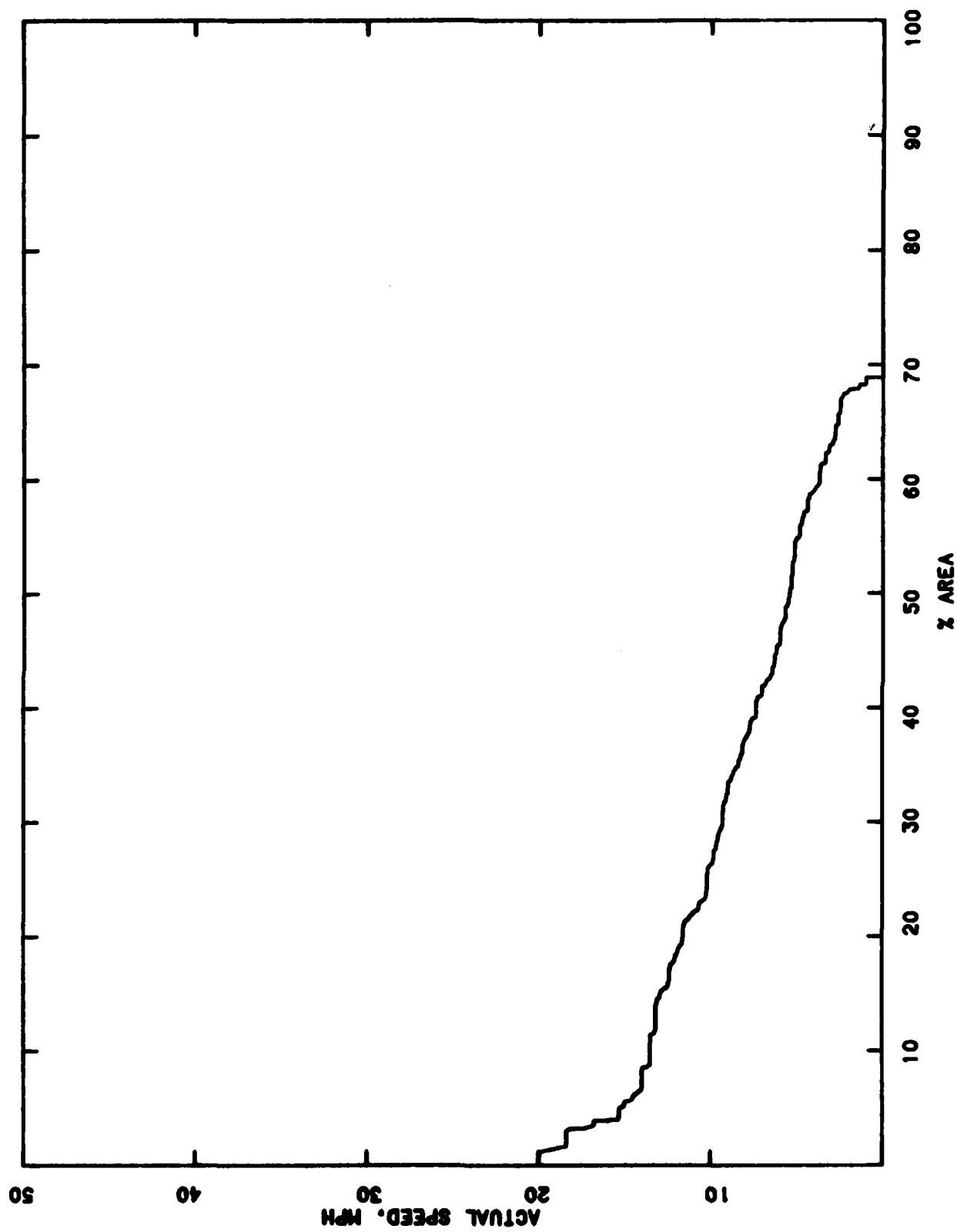
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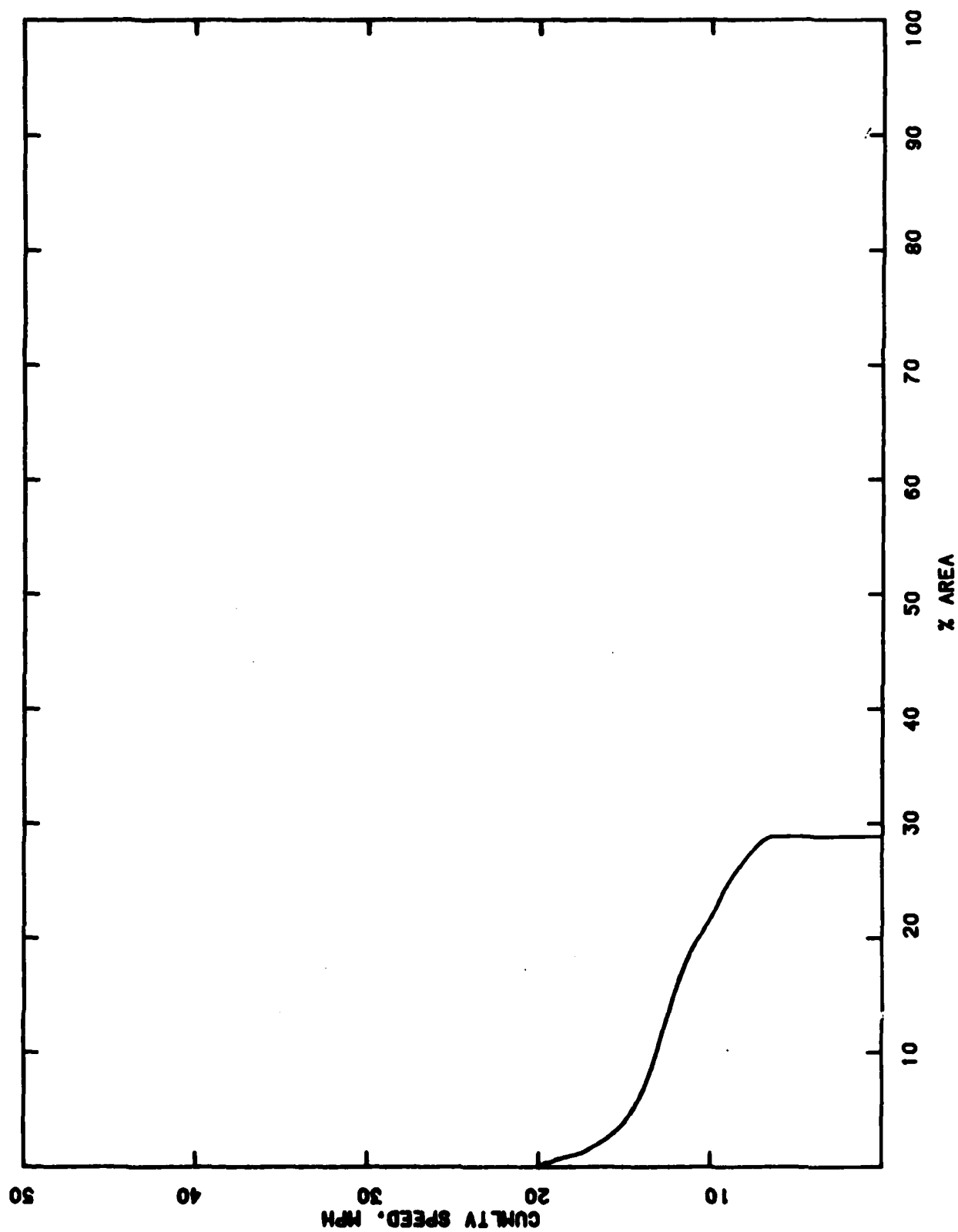
PERFORMANCE OF M814101 IN MIDEAST1 DRY



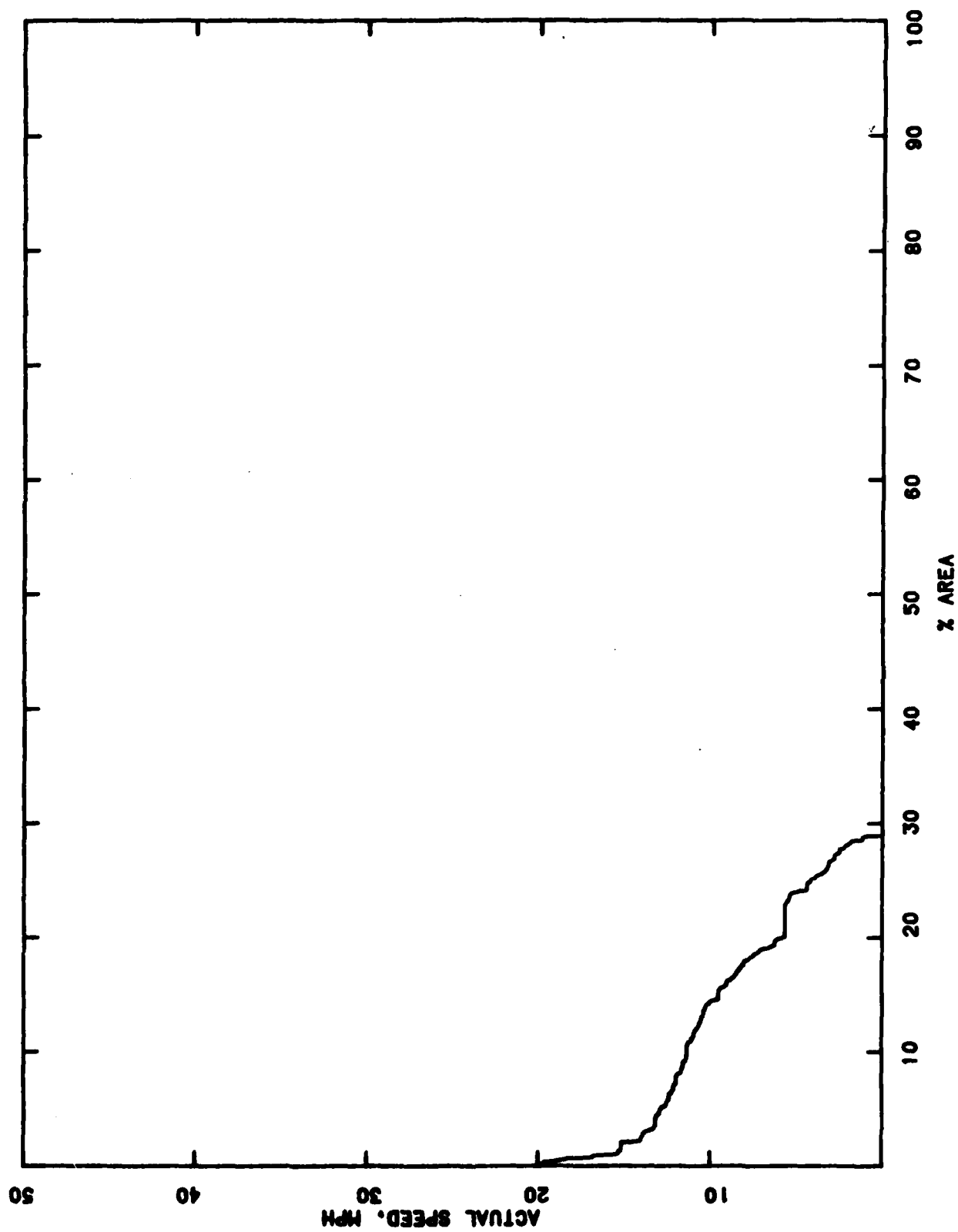
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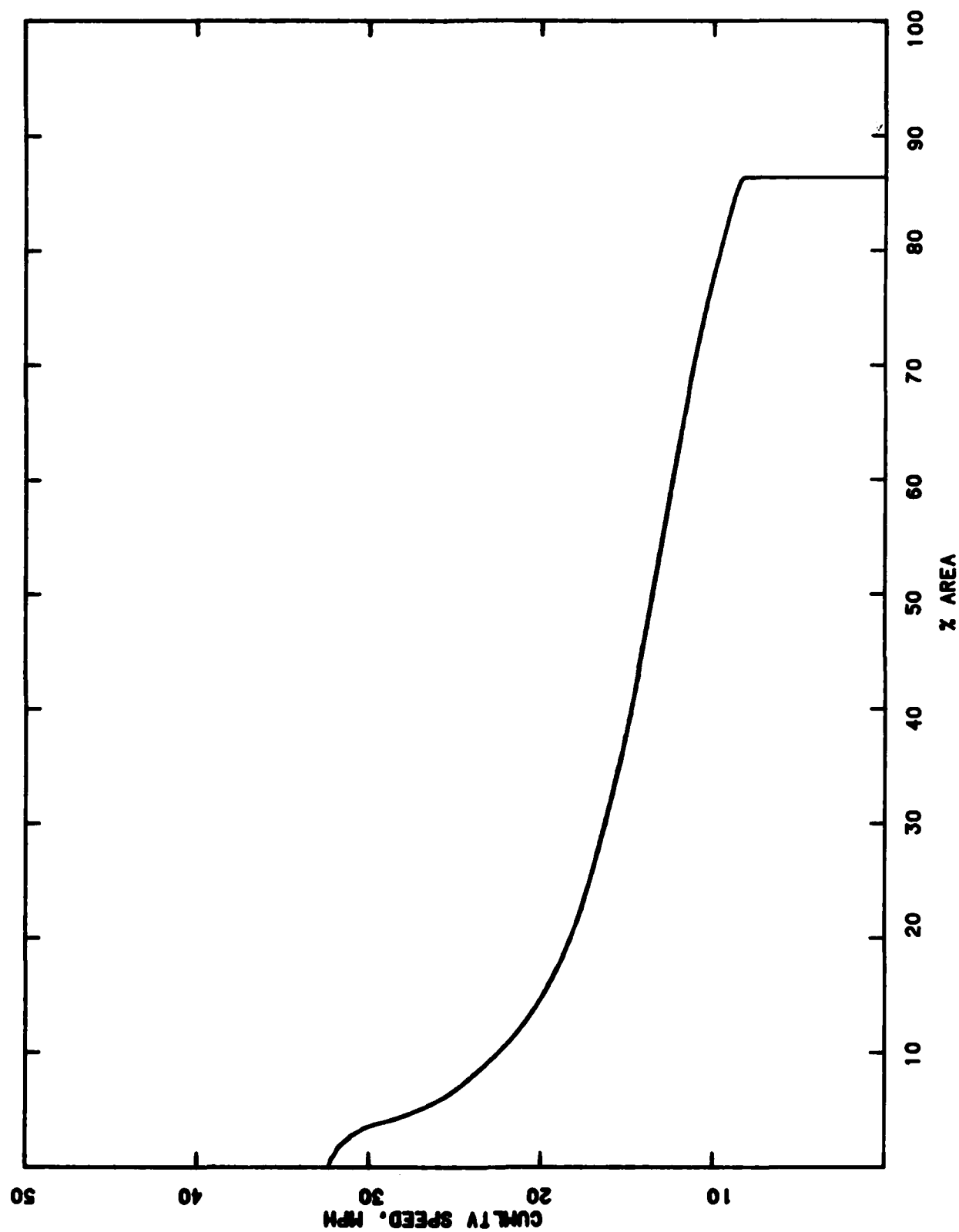
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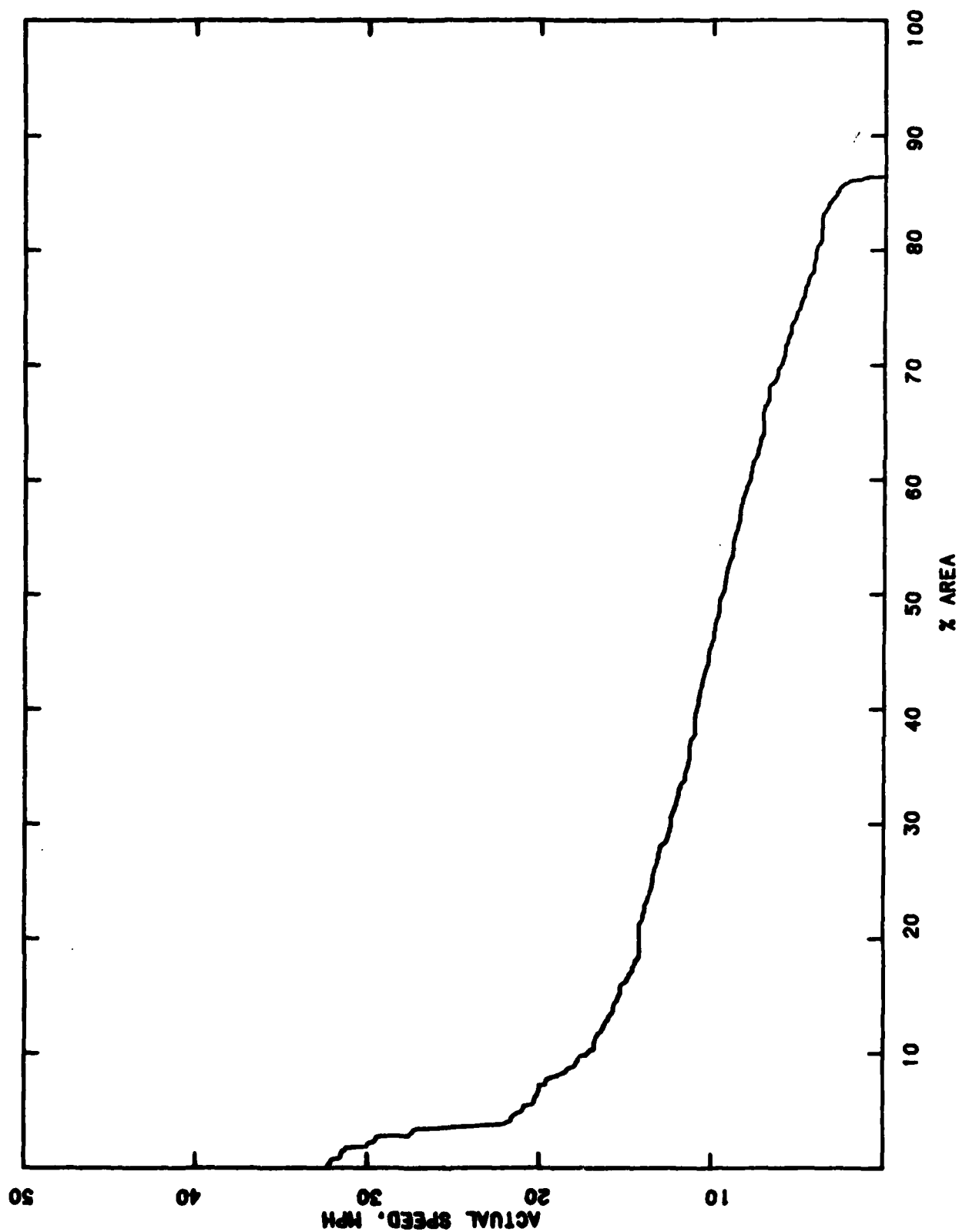
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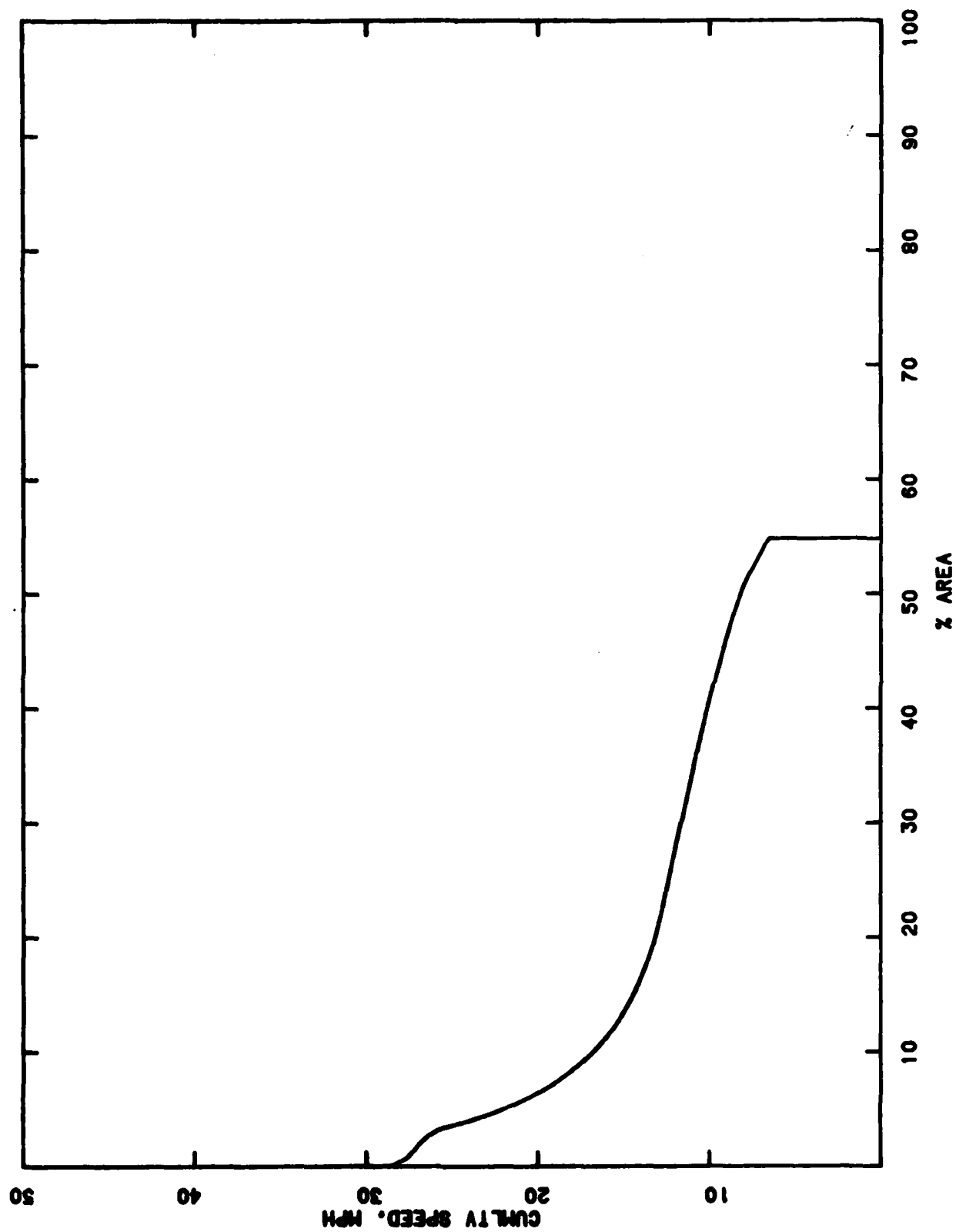
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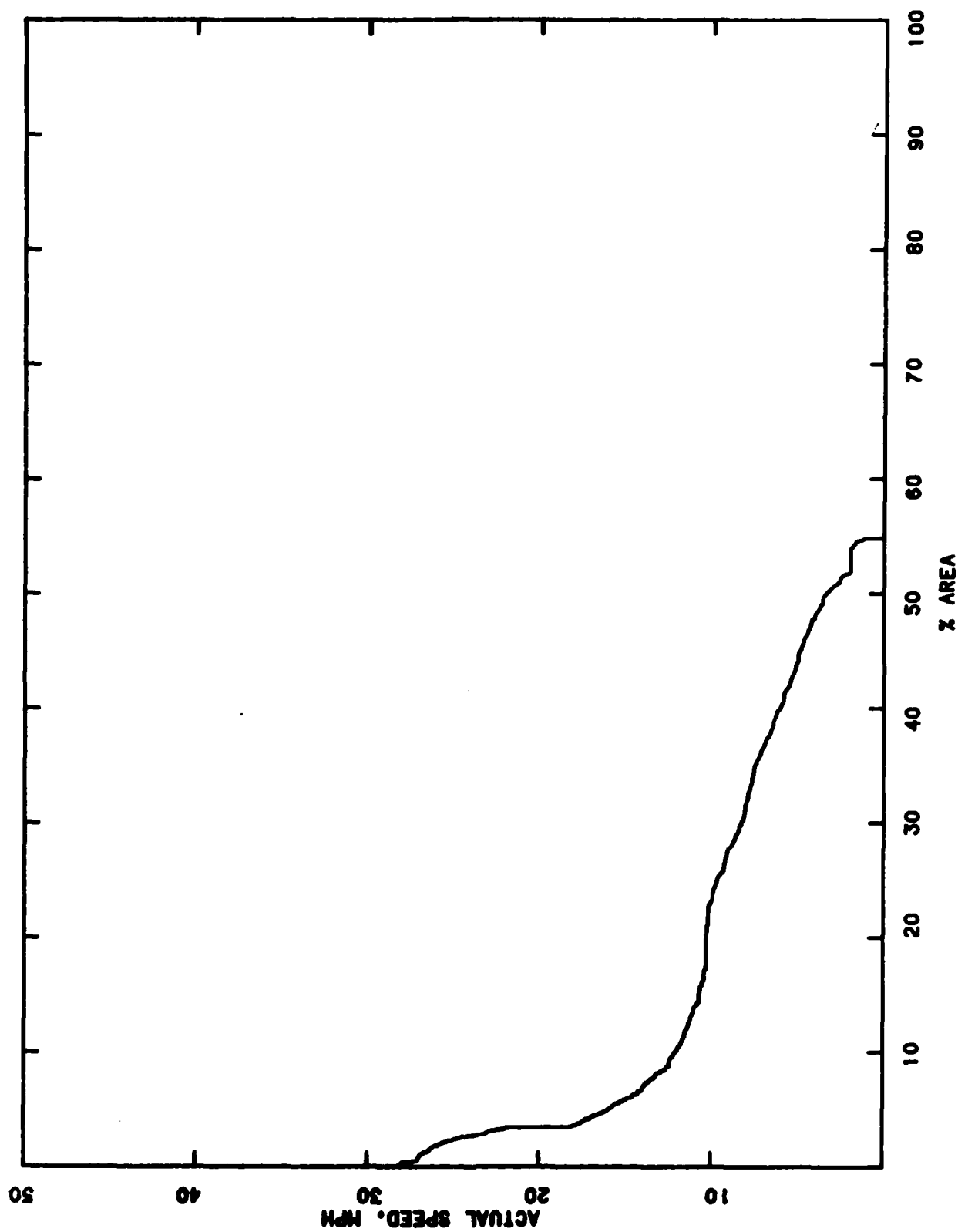
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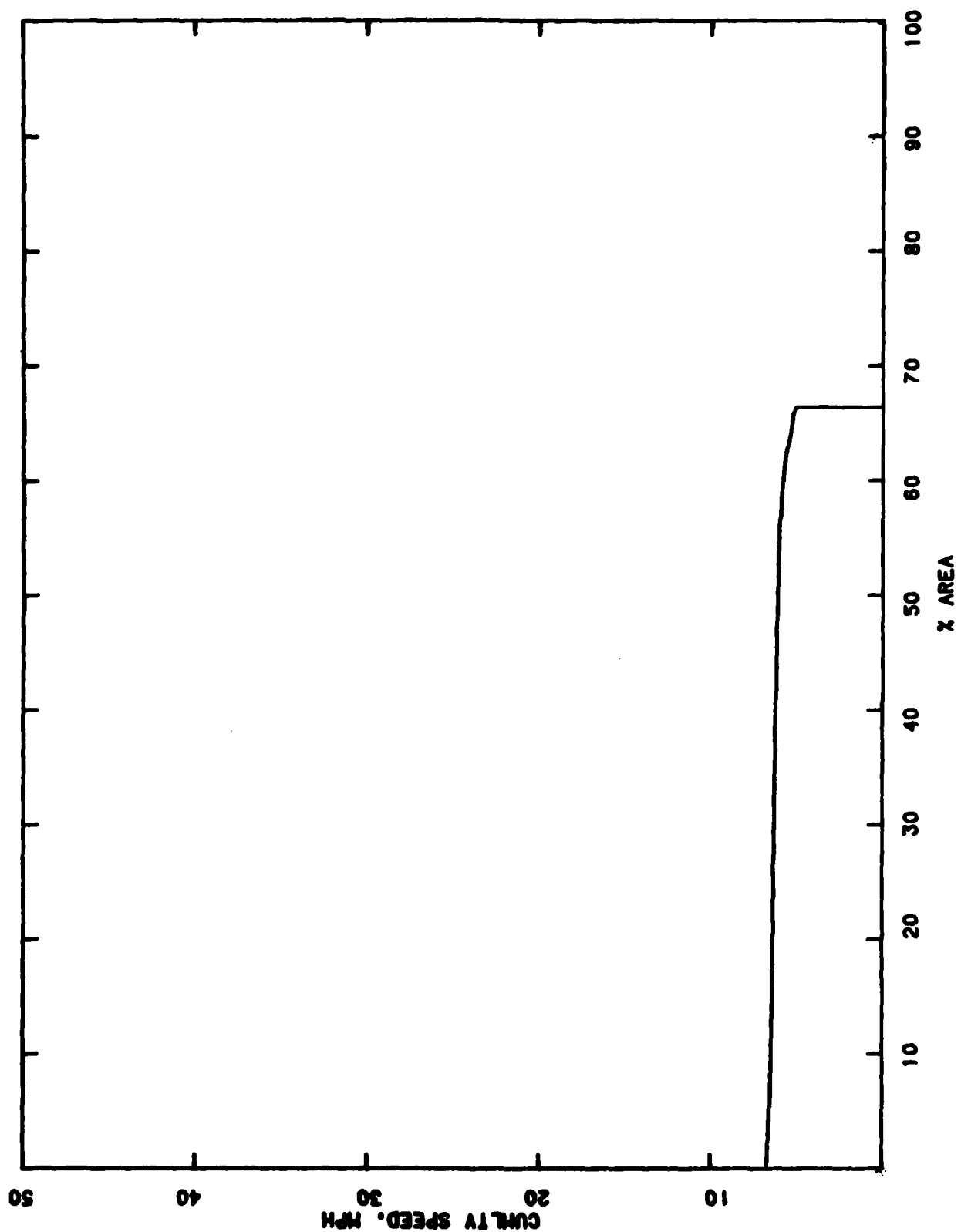
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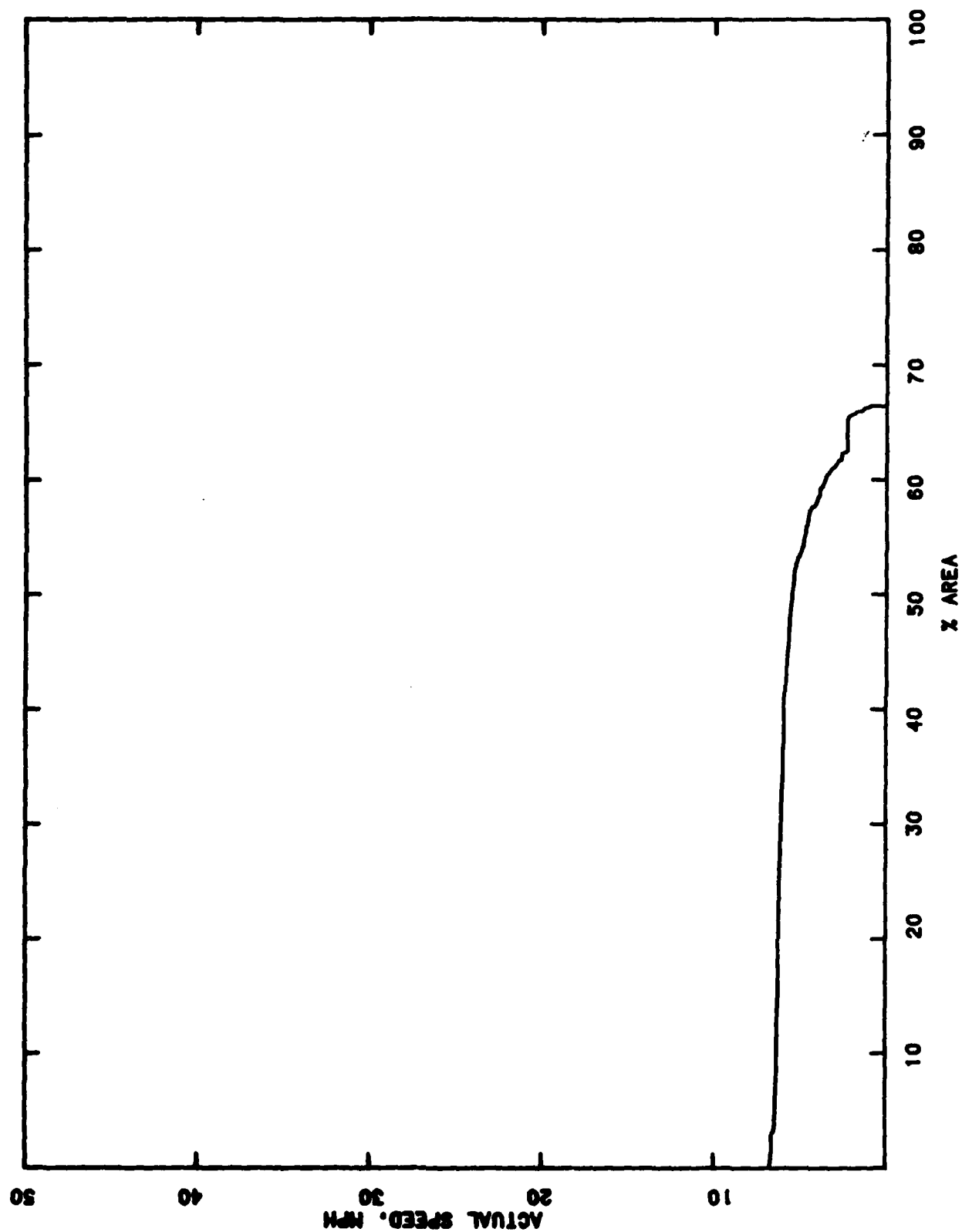
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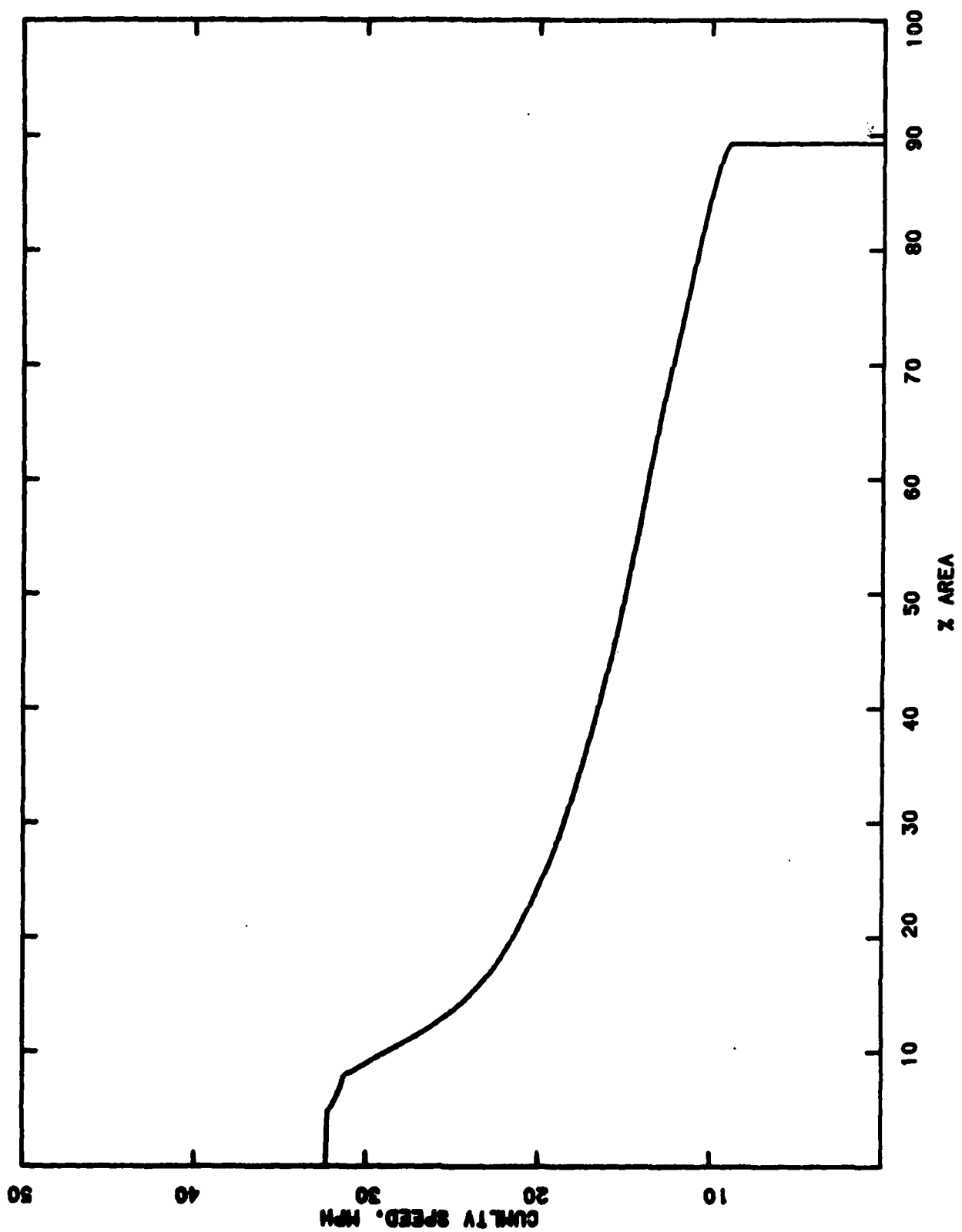
PERFORMANCE OF M814107 IN EUROPE1 SNOW



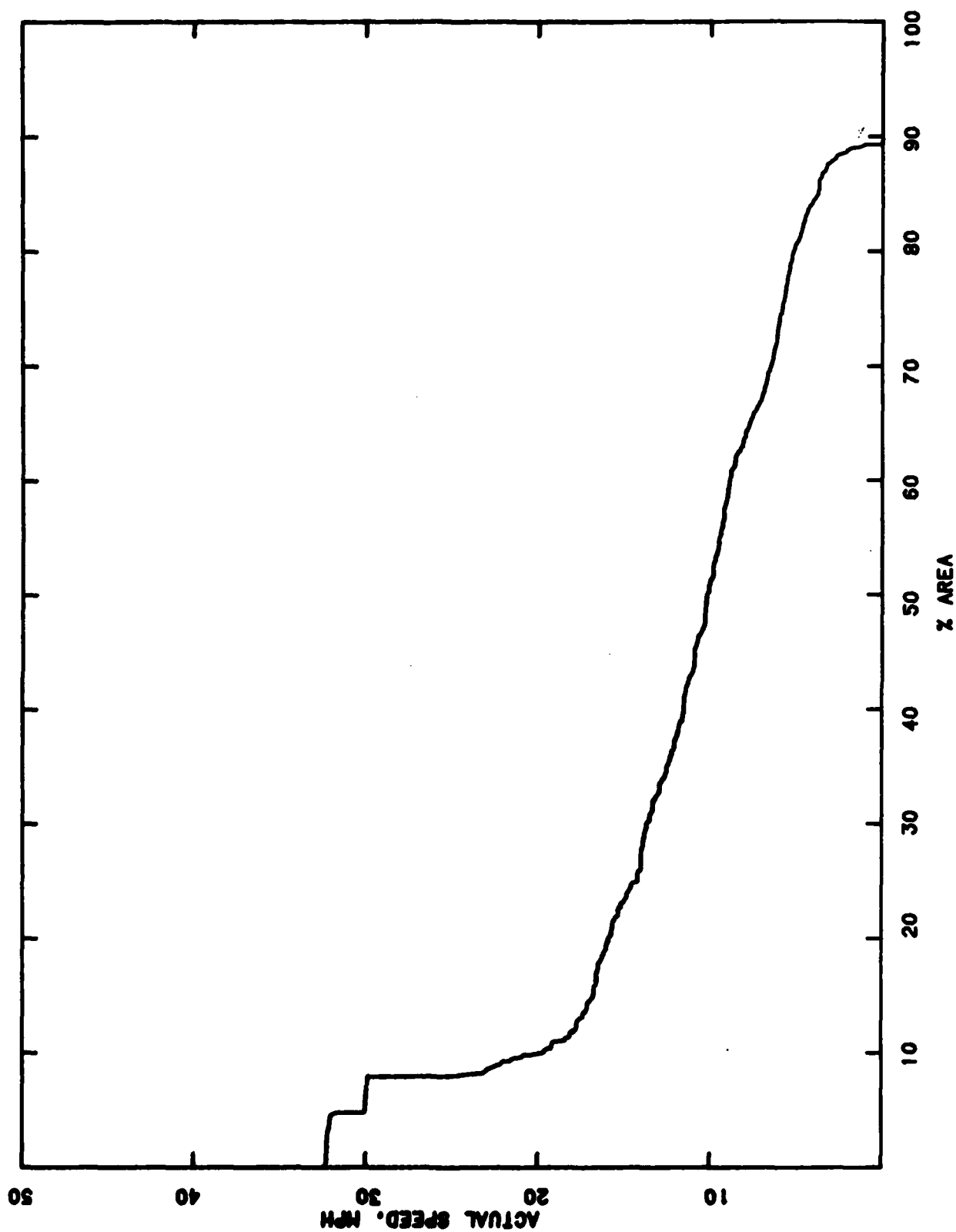
PERFORMANCE OF M814107 IN EUROPE1 SNOW



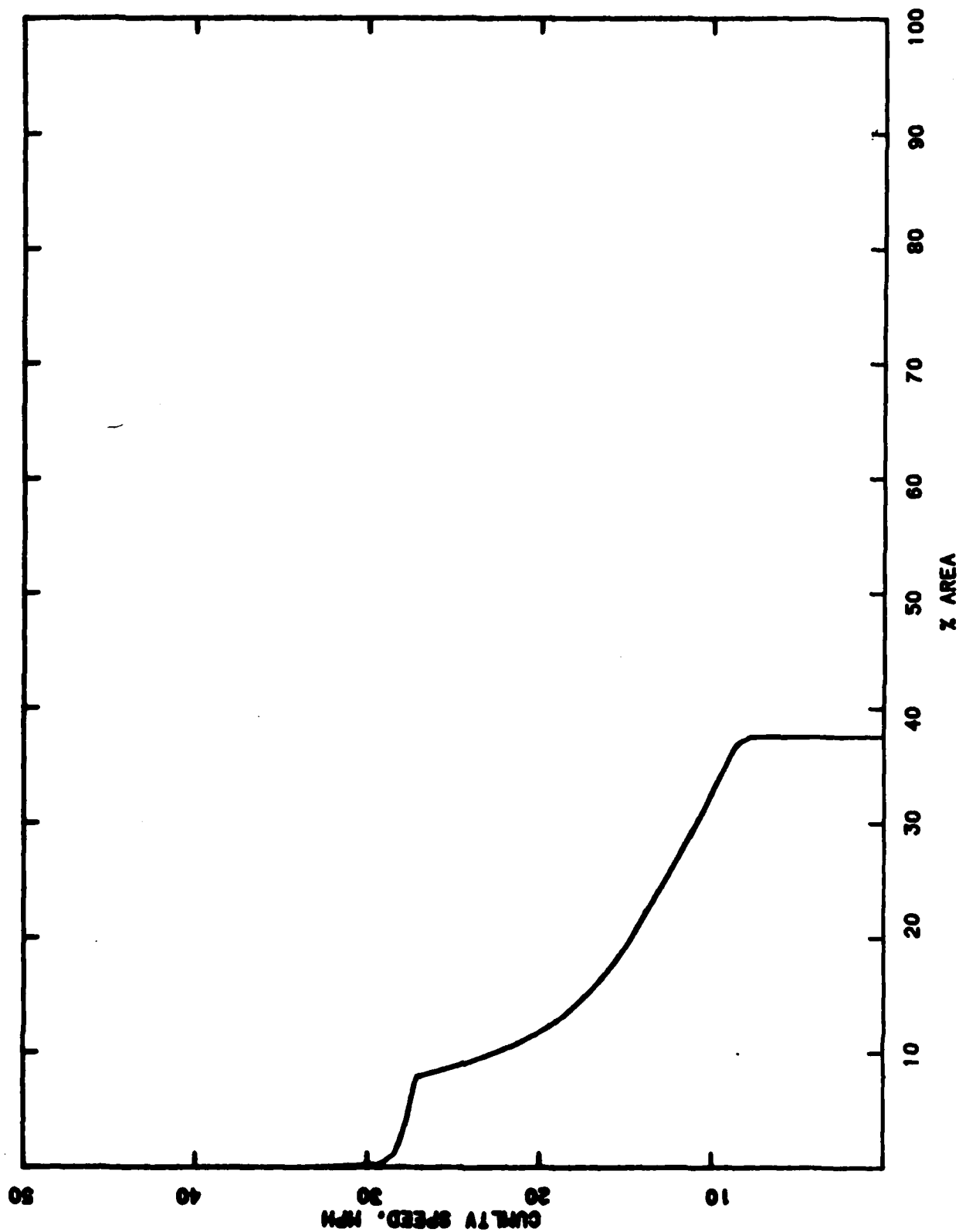
PERFORMANCE OF M814107 IN EUROPE2 DRY



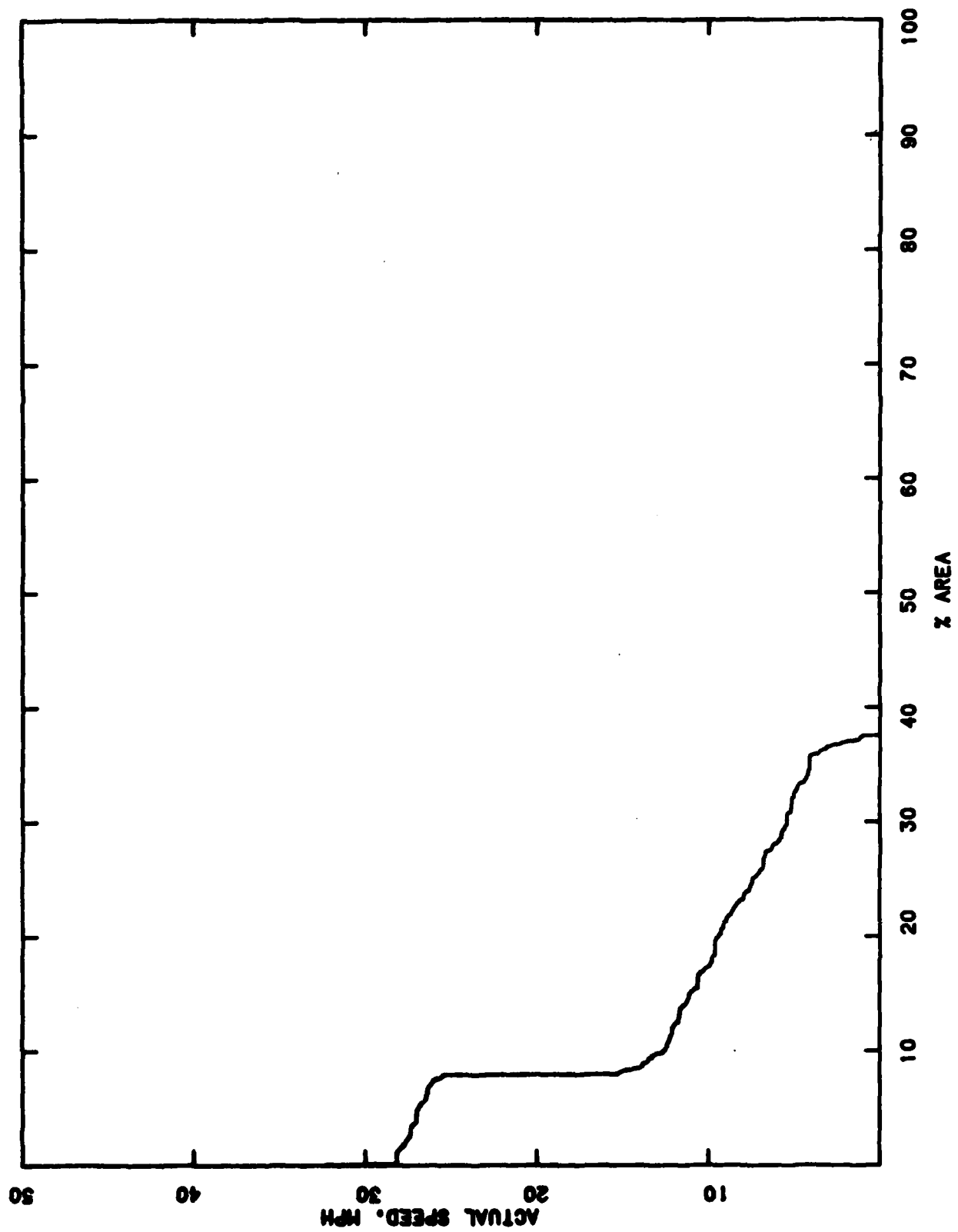
PERFORMANCE OF M814107 IN EUROPE2 DRY



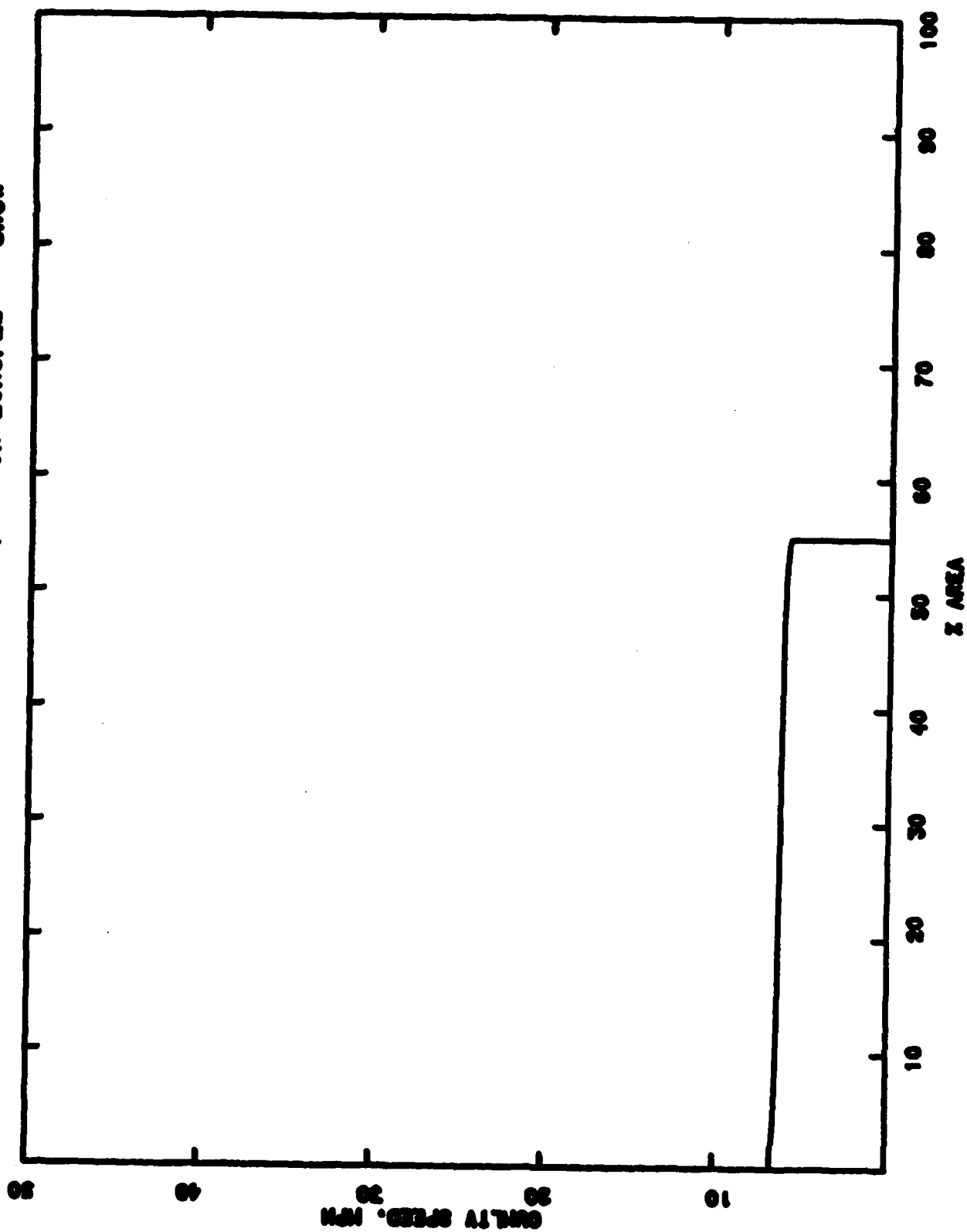
PERFORMANCE OF M814107 IN EUROPE2 WET



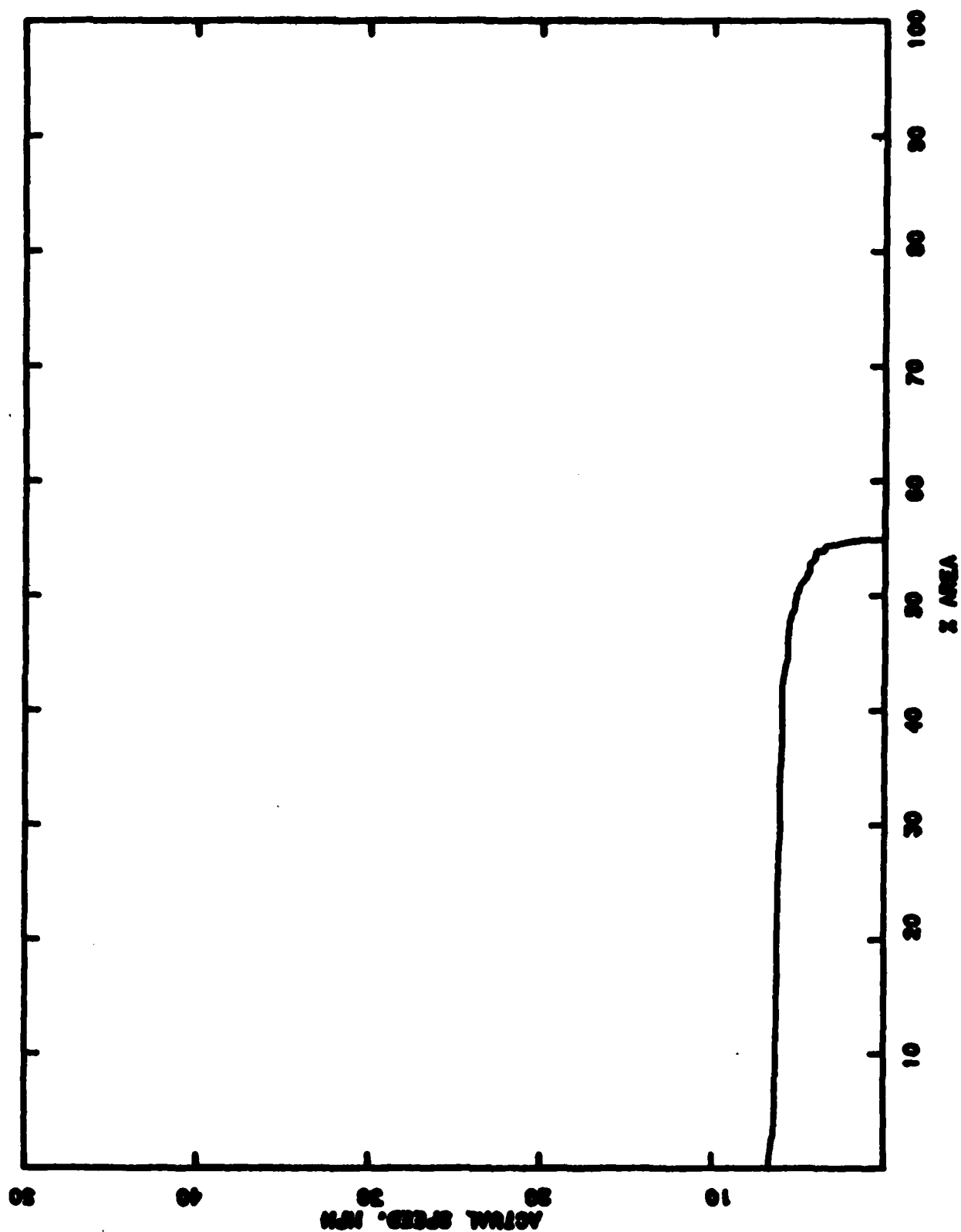
PERFORMANCE OF M814107 IN EUROPE2 WET



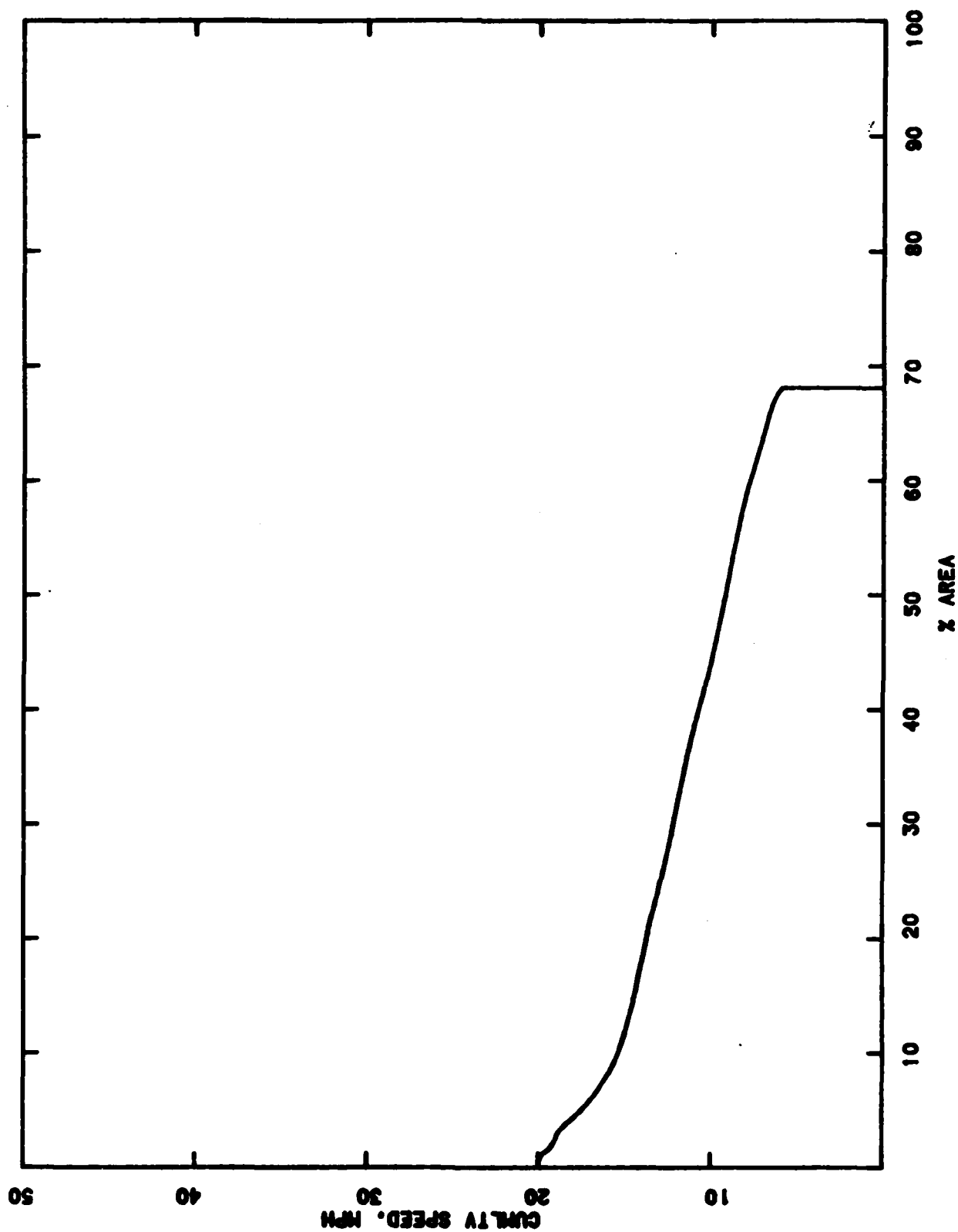
PERFORMANCE OF MB14107 IN EUROPE2 SHOW



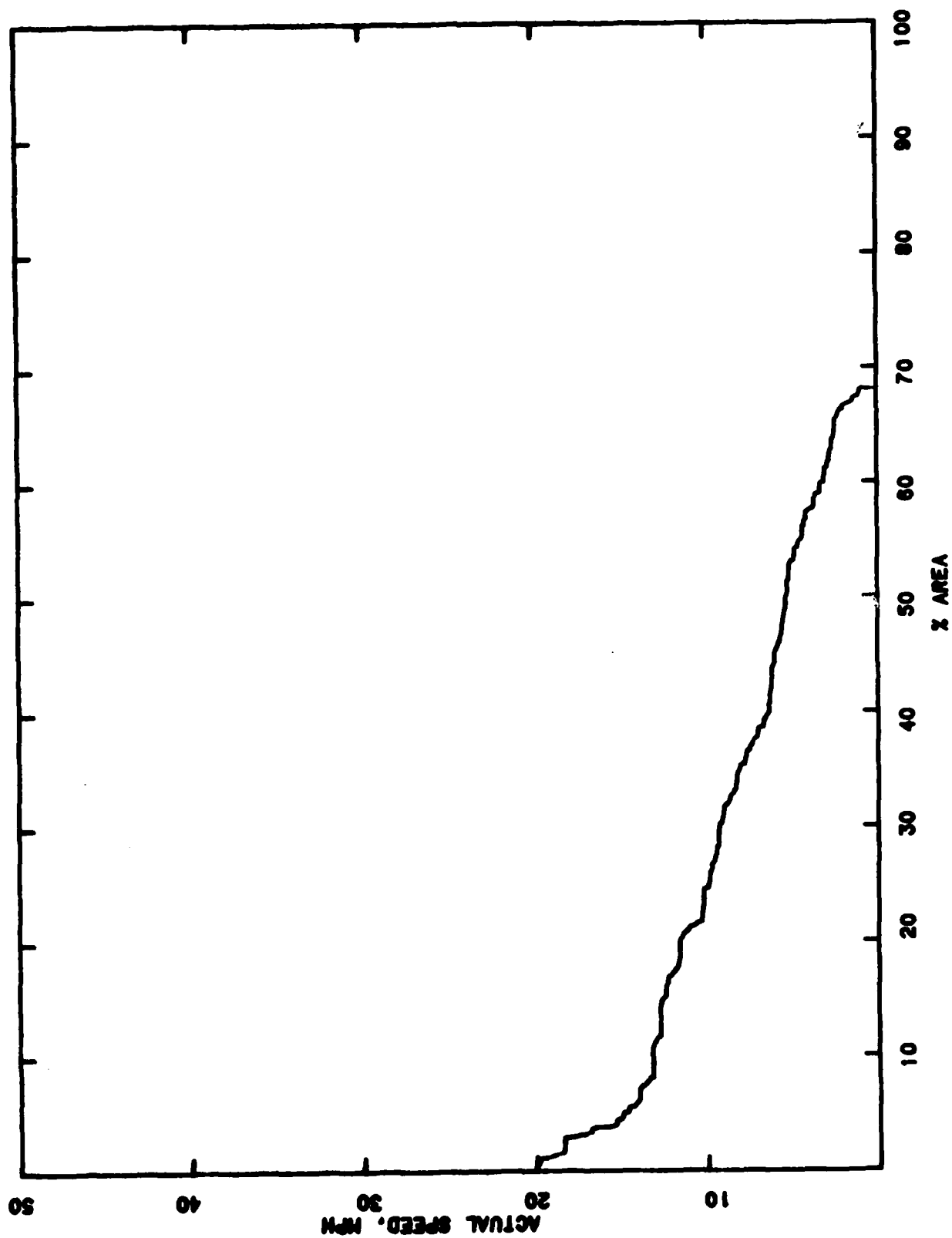
PERFORMANCE OF H814107 IN EUROPE2 SHOW



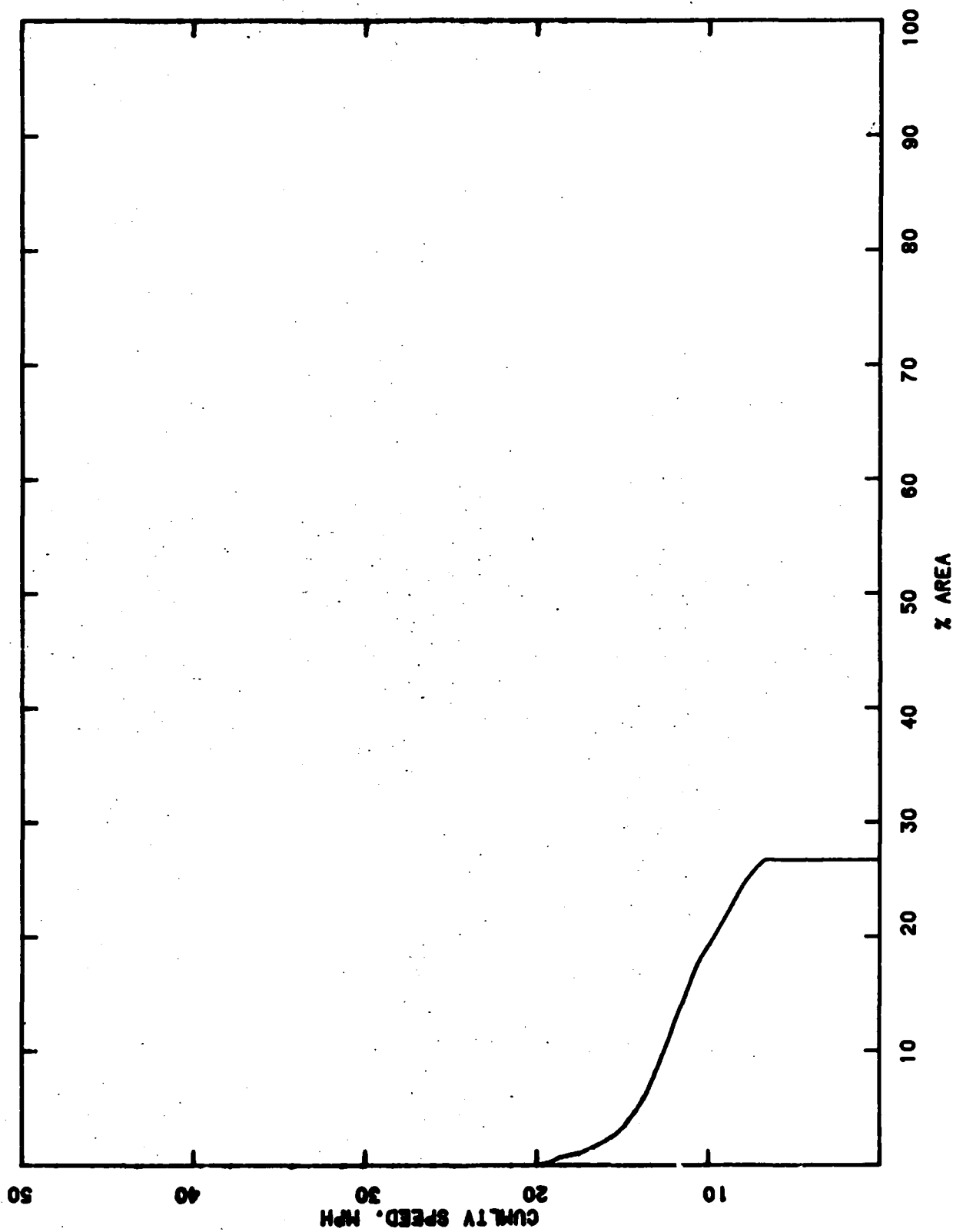
PERFORMANCE OF M814107 IN MIDEAST1 DRY



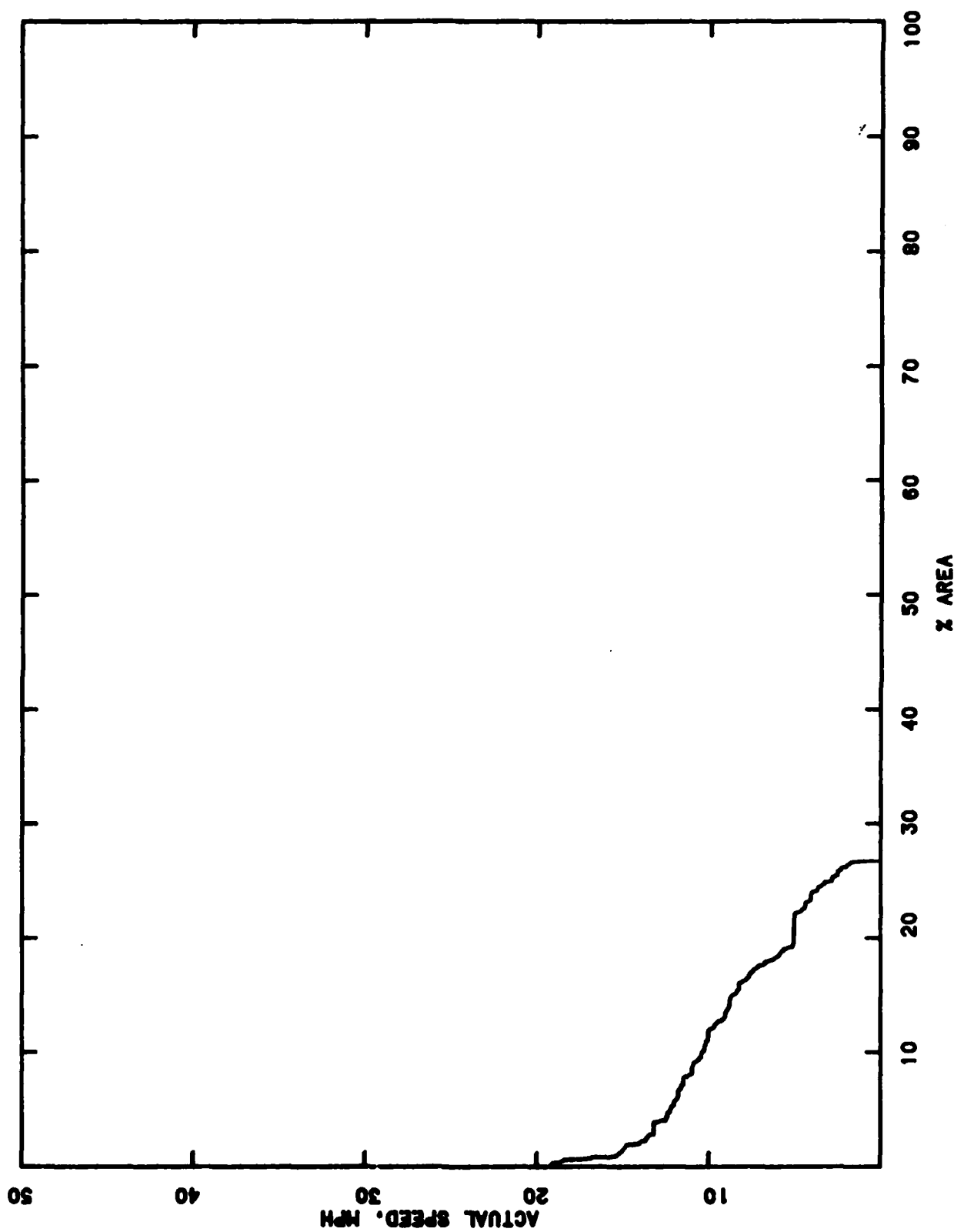
PERFORMANCE OF M814107 IN MIDEAST1 DRY



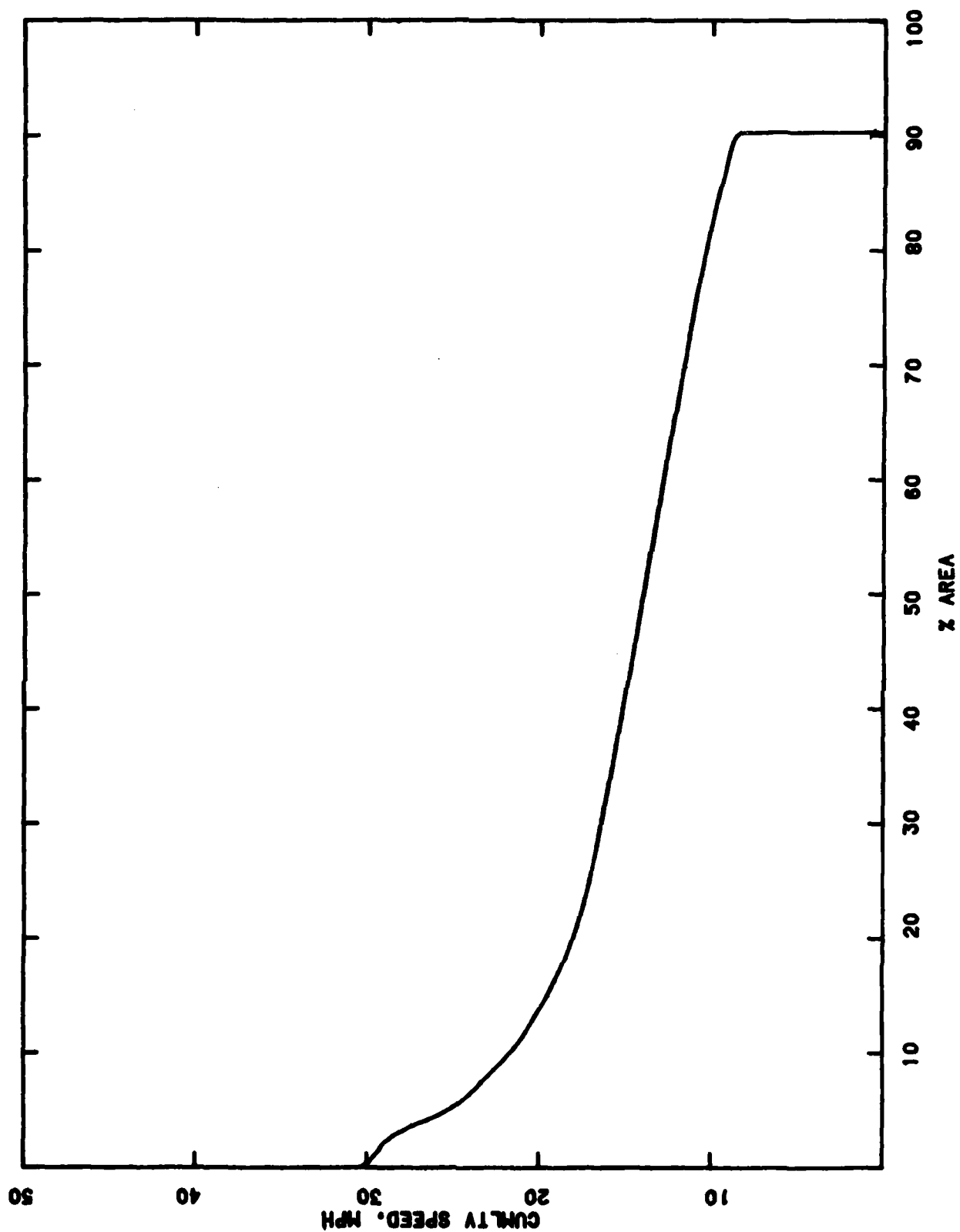
PERFORMANCE OF M814107 IN MIDEAST1 WET



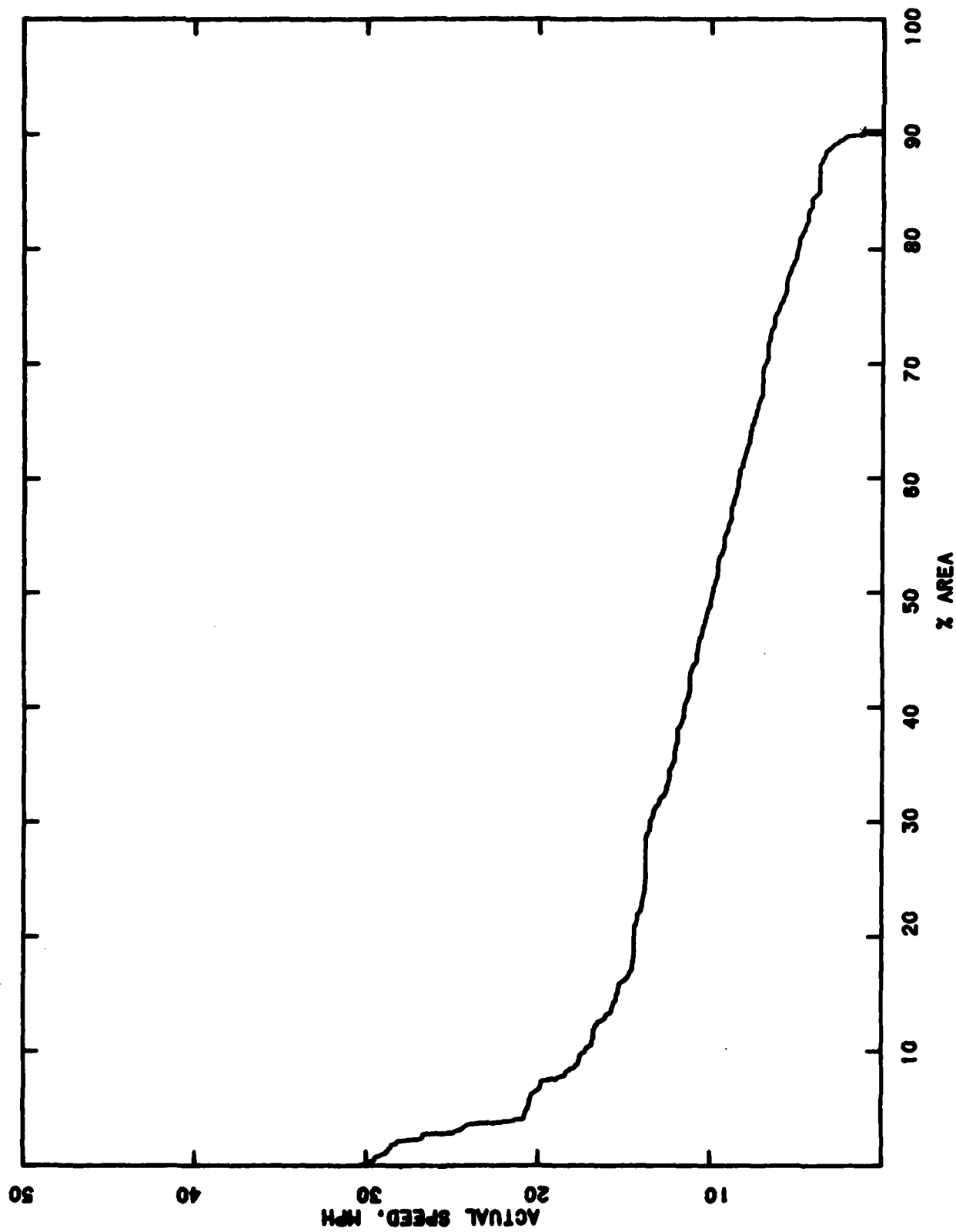
PERFORMANCE OF M814107 IN MIDEAST1 WET



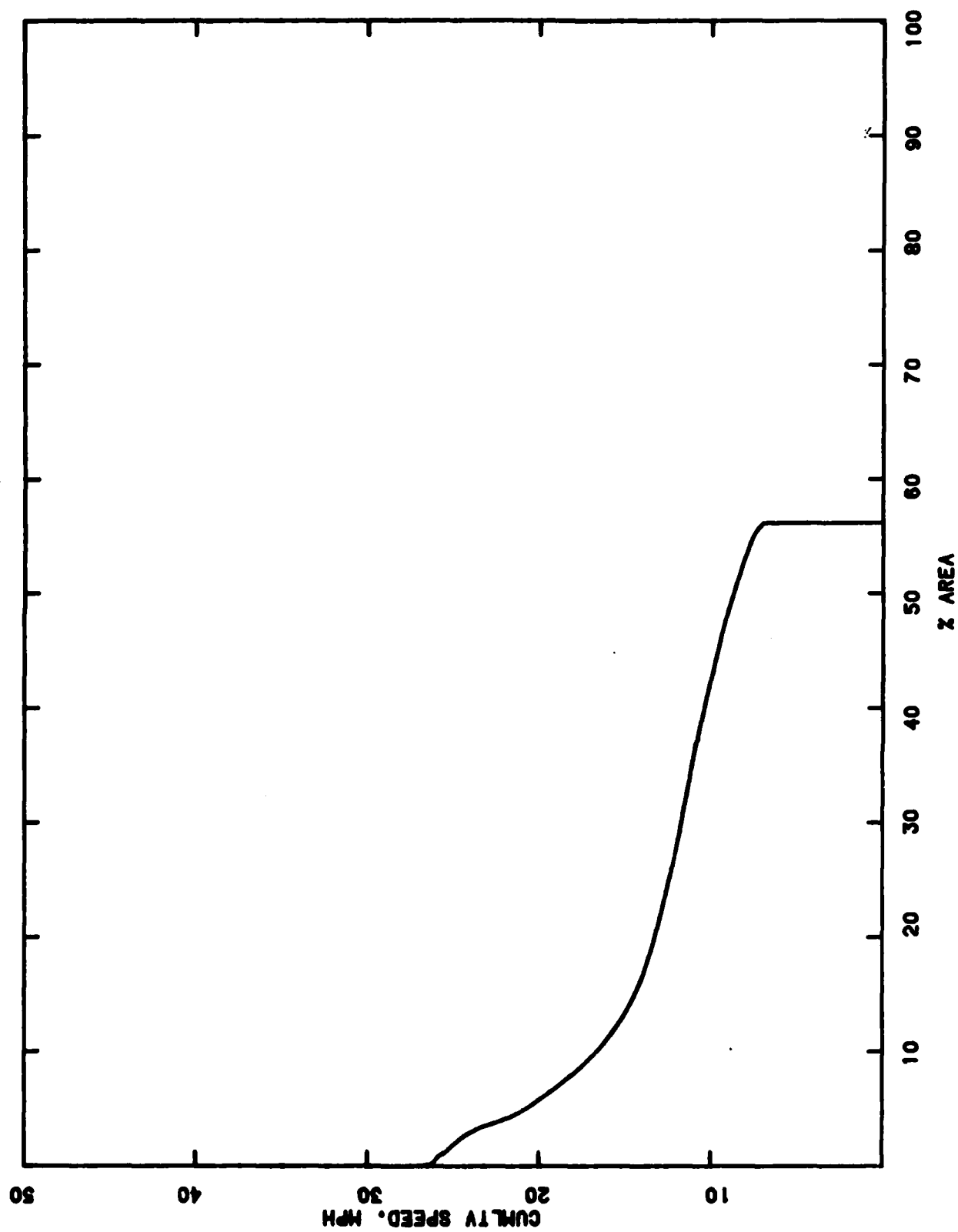
PERFORMANCE OF M816WR IN EUROPE1 DRY



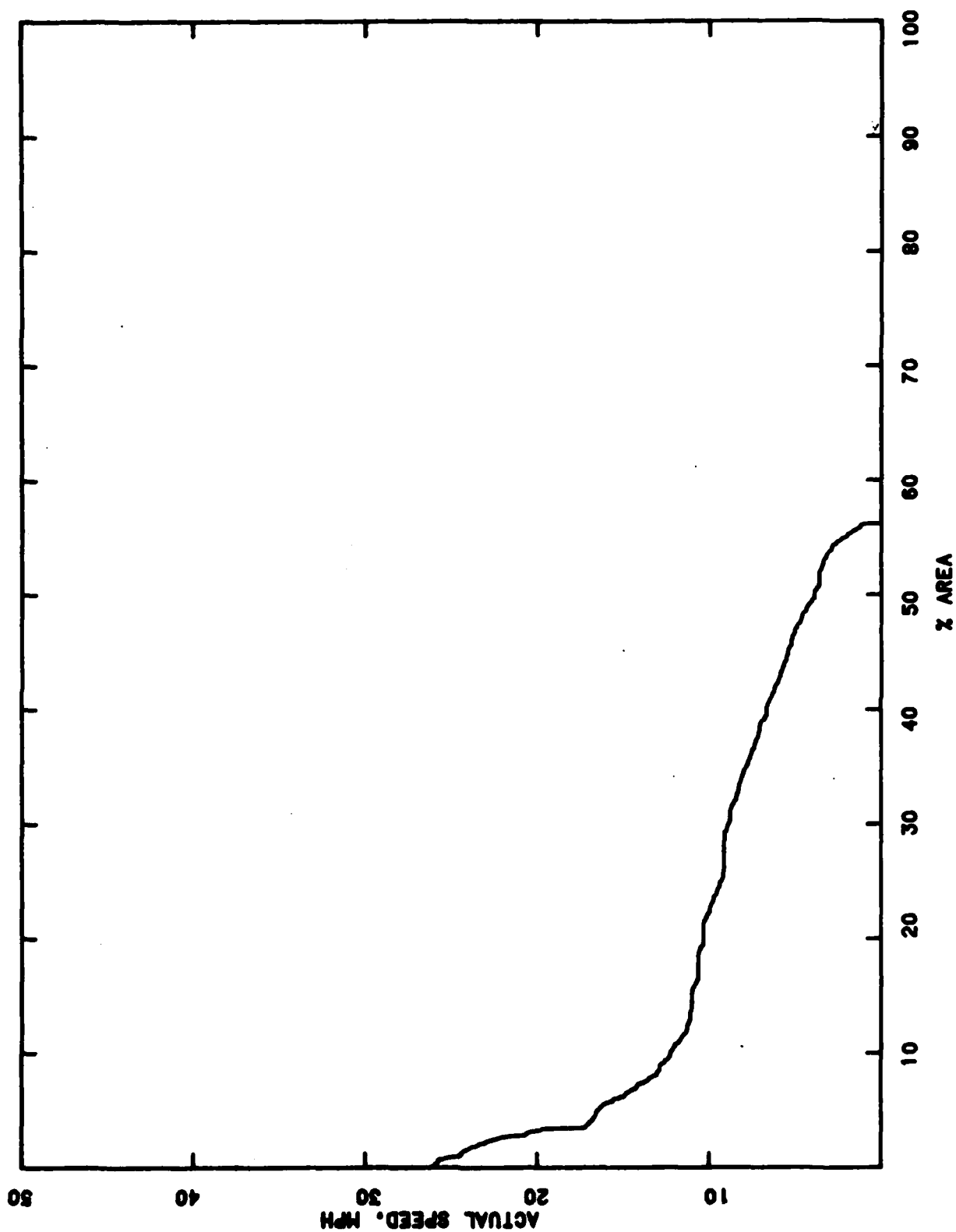
PERFORMANCE OF M816WR IN EUROPE1 DRY



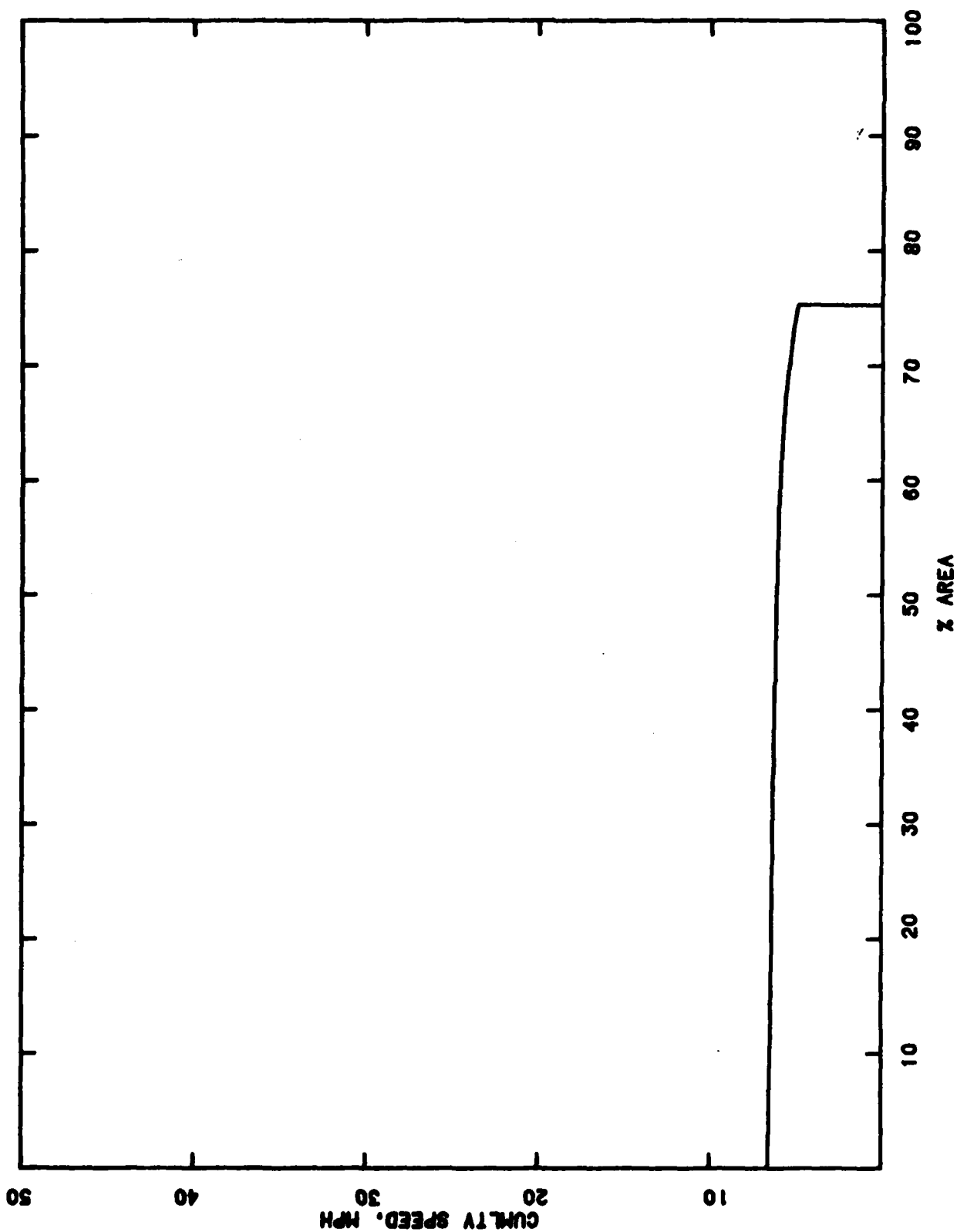
PERFORMANCE OF M816VR IN EUROPE1 WET



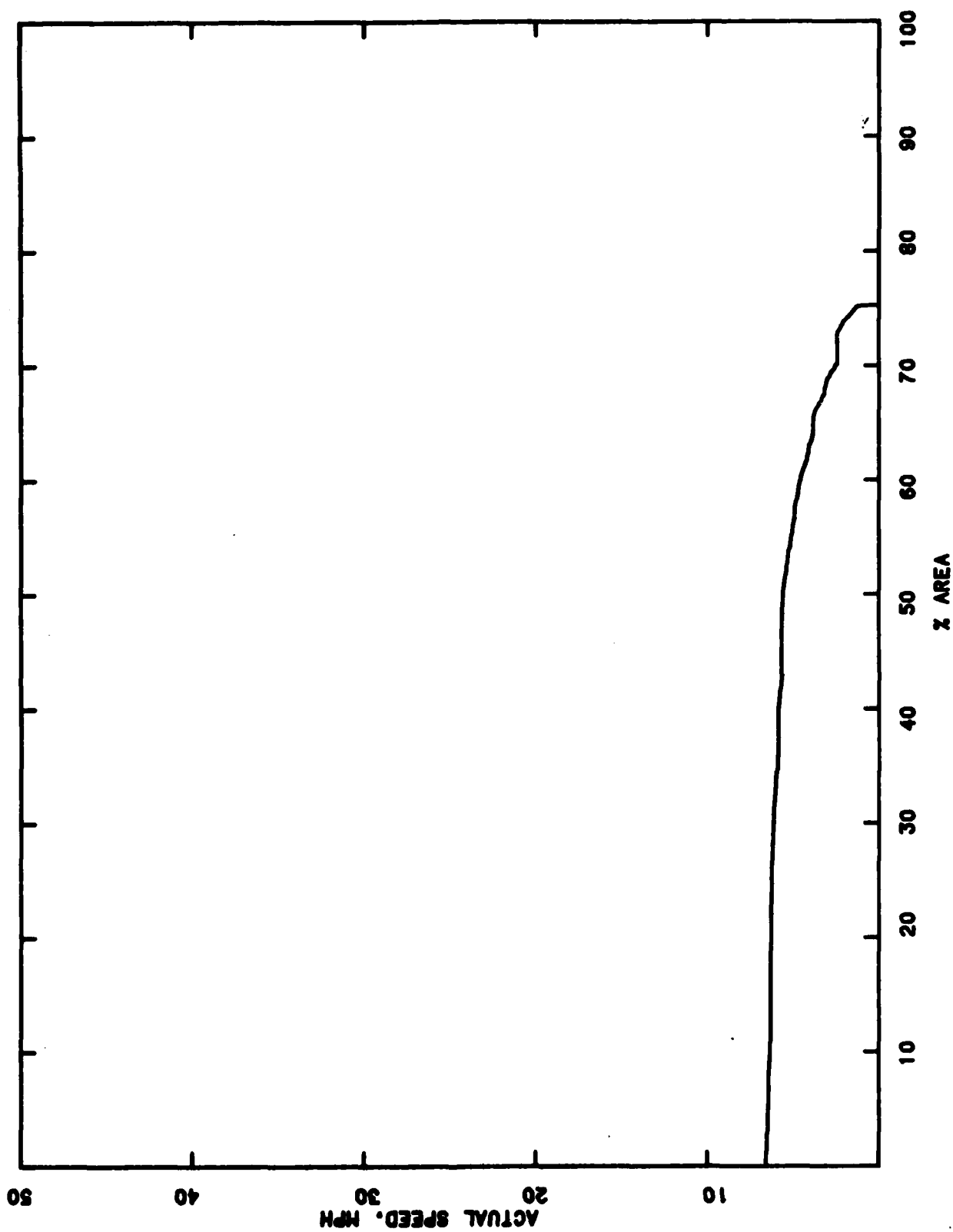
PERFORMANCE OF M816WR IN EUROPE1 WET



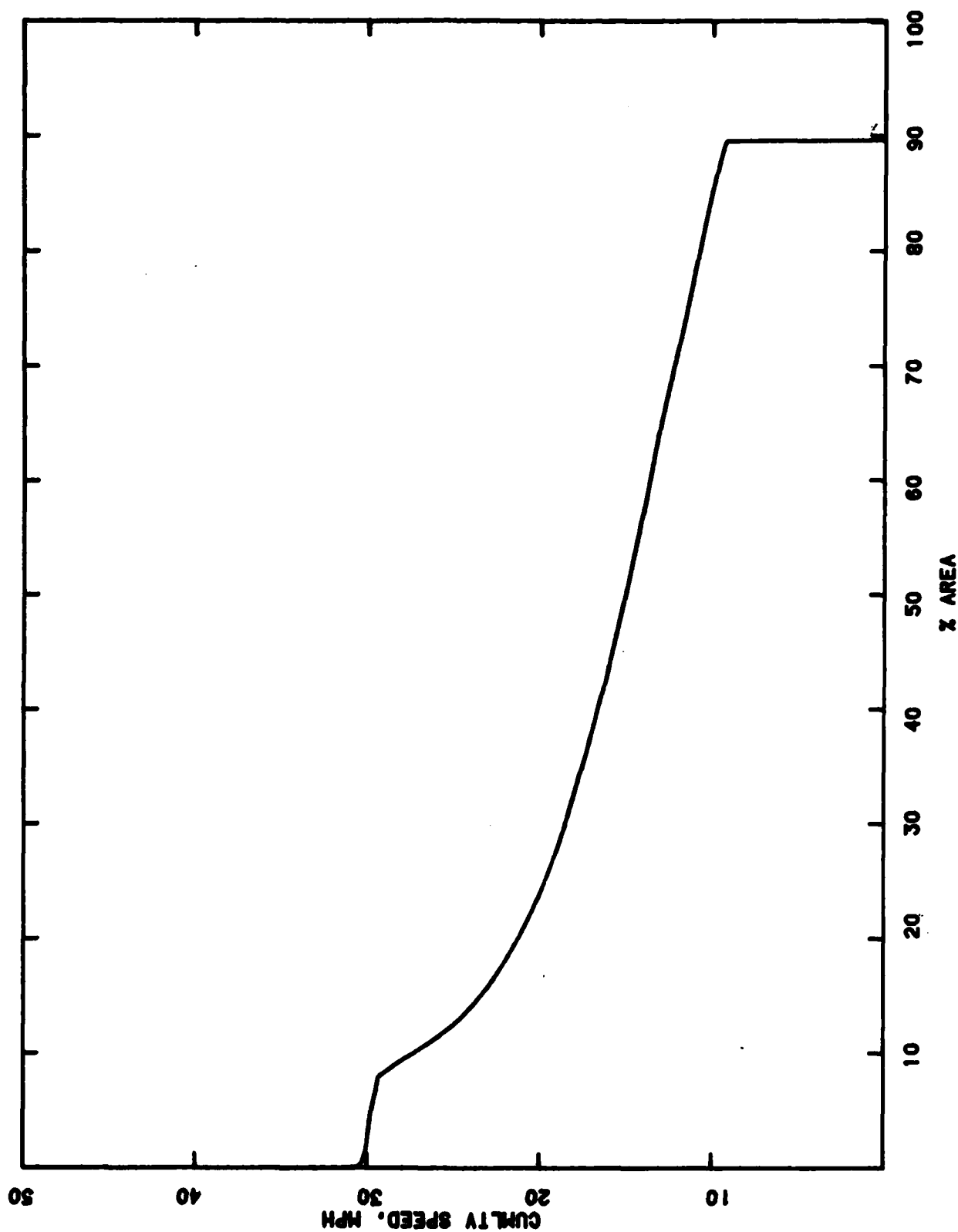
PERFORMANCE OF M816WR IN EUROPE1 SNOW



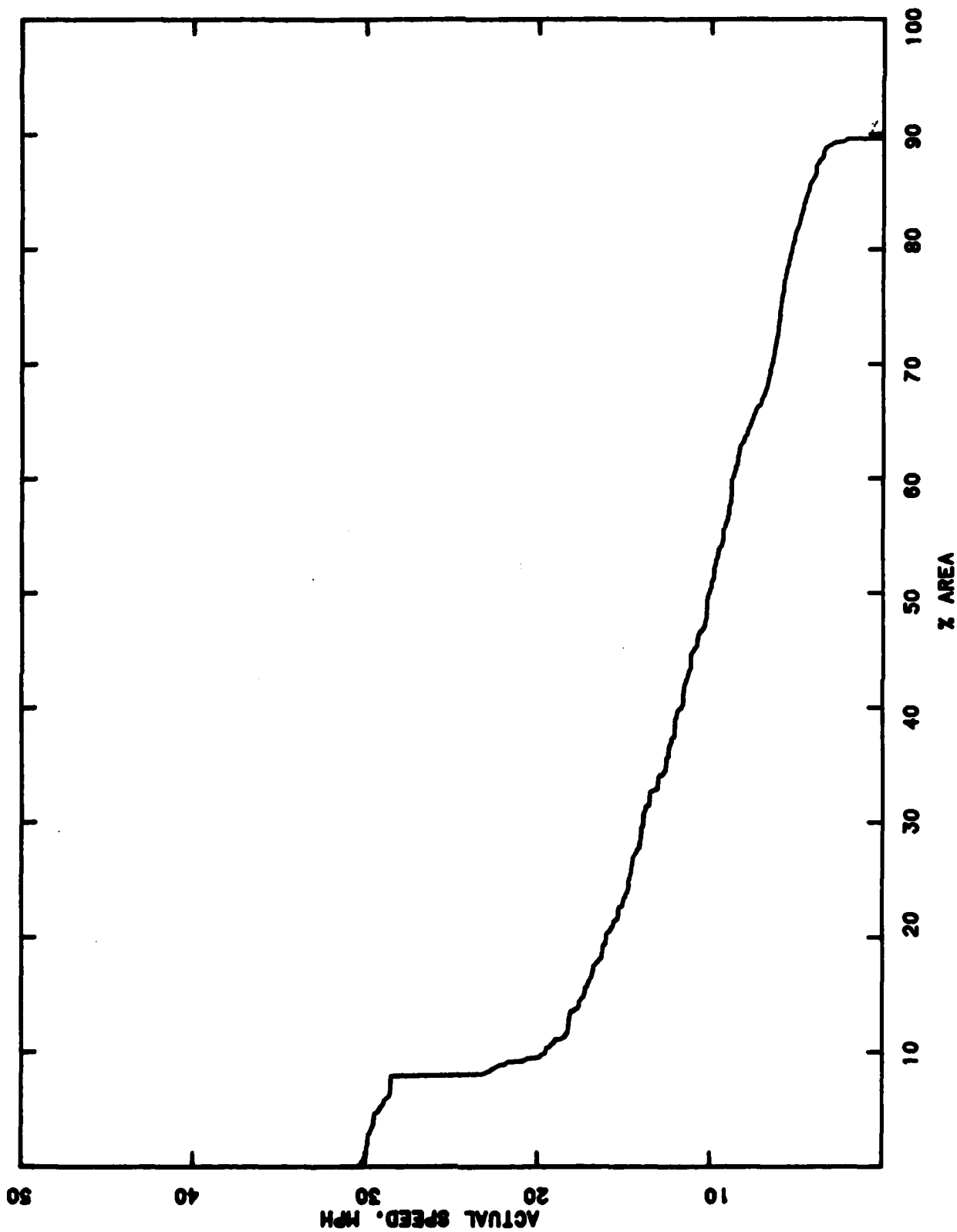
PERFORMANCE OF M816WR IN EUROPE1 SNOW



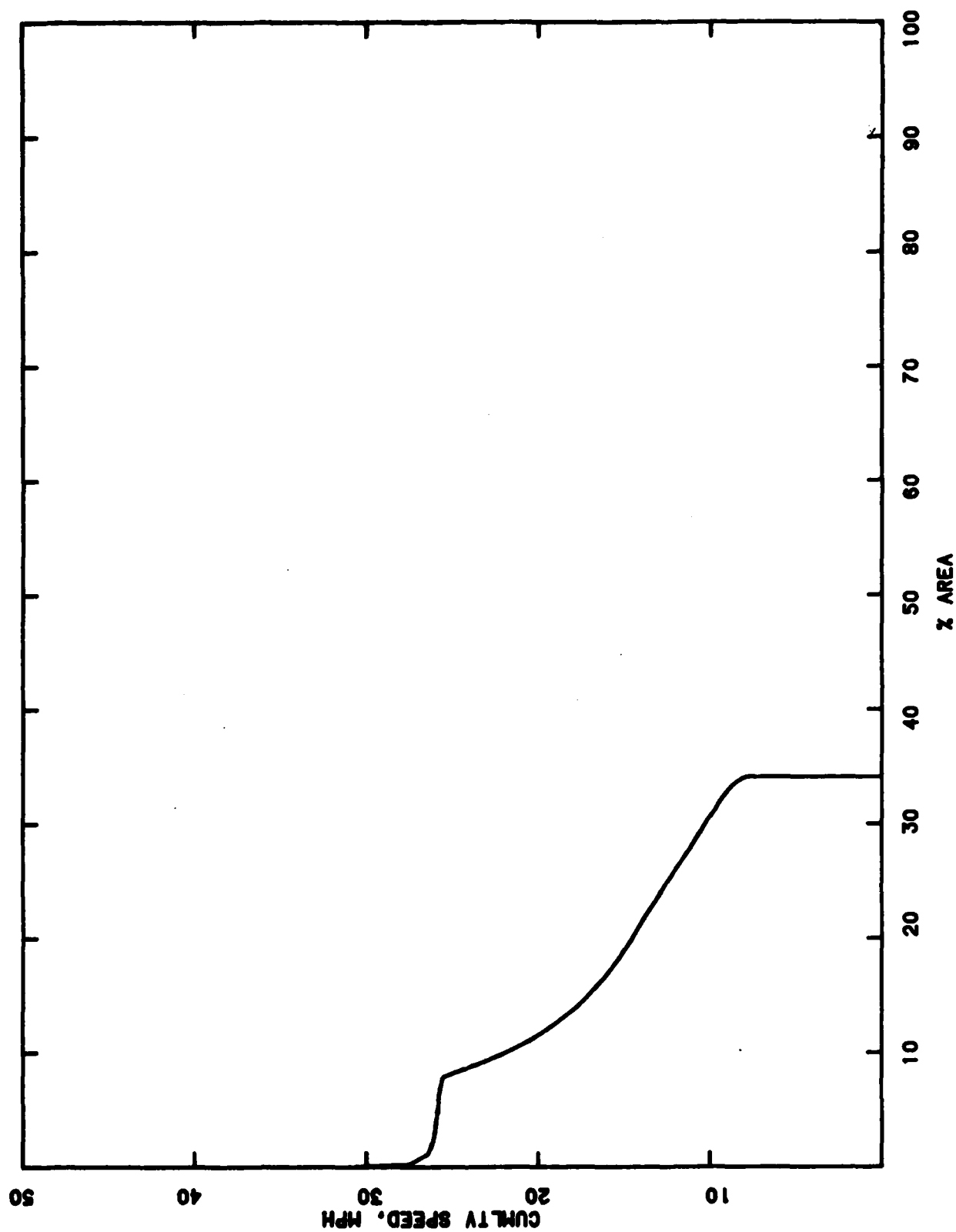
PERFORMANCE OF M816WR IN EUROPE2 DRY



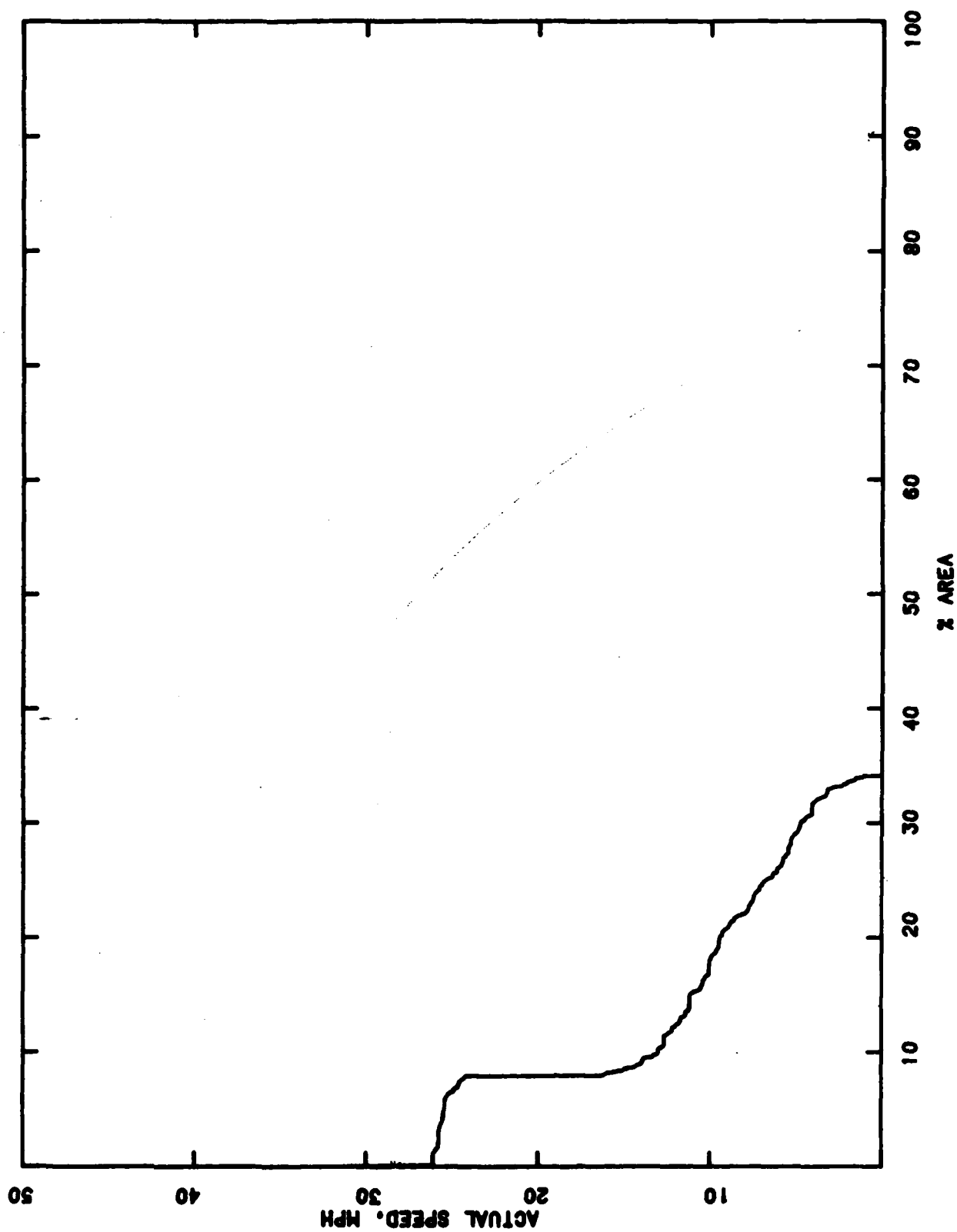
PERFORMANCE OF M816WR IN EUROPE2 DRY



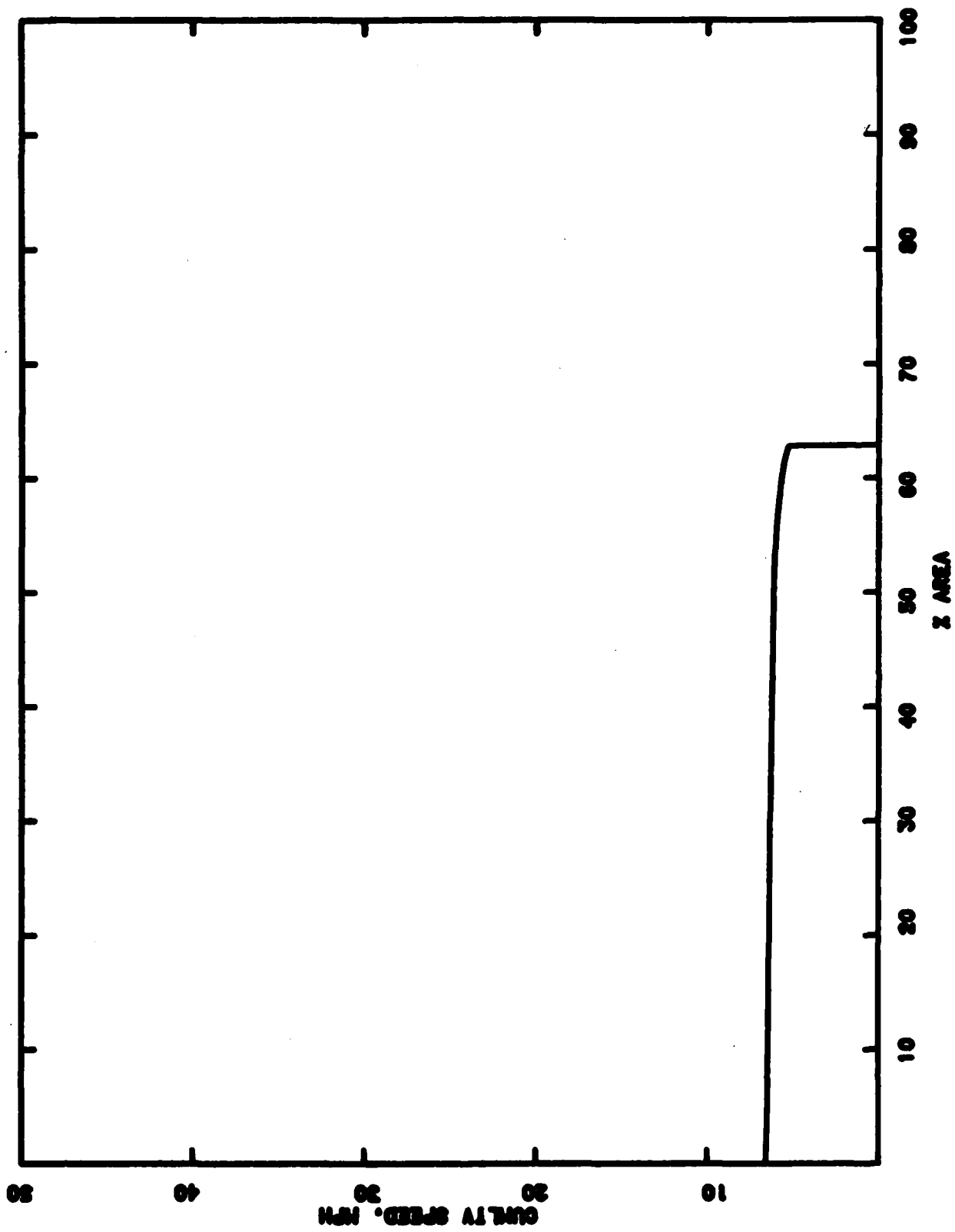
PERFORMANCE OF M816WR IN EUROPE2 WET



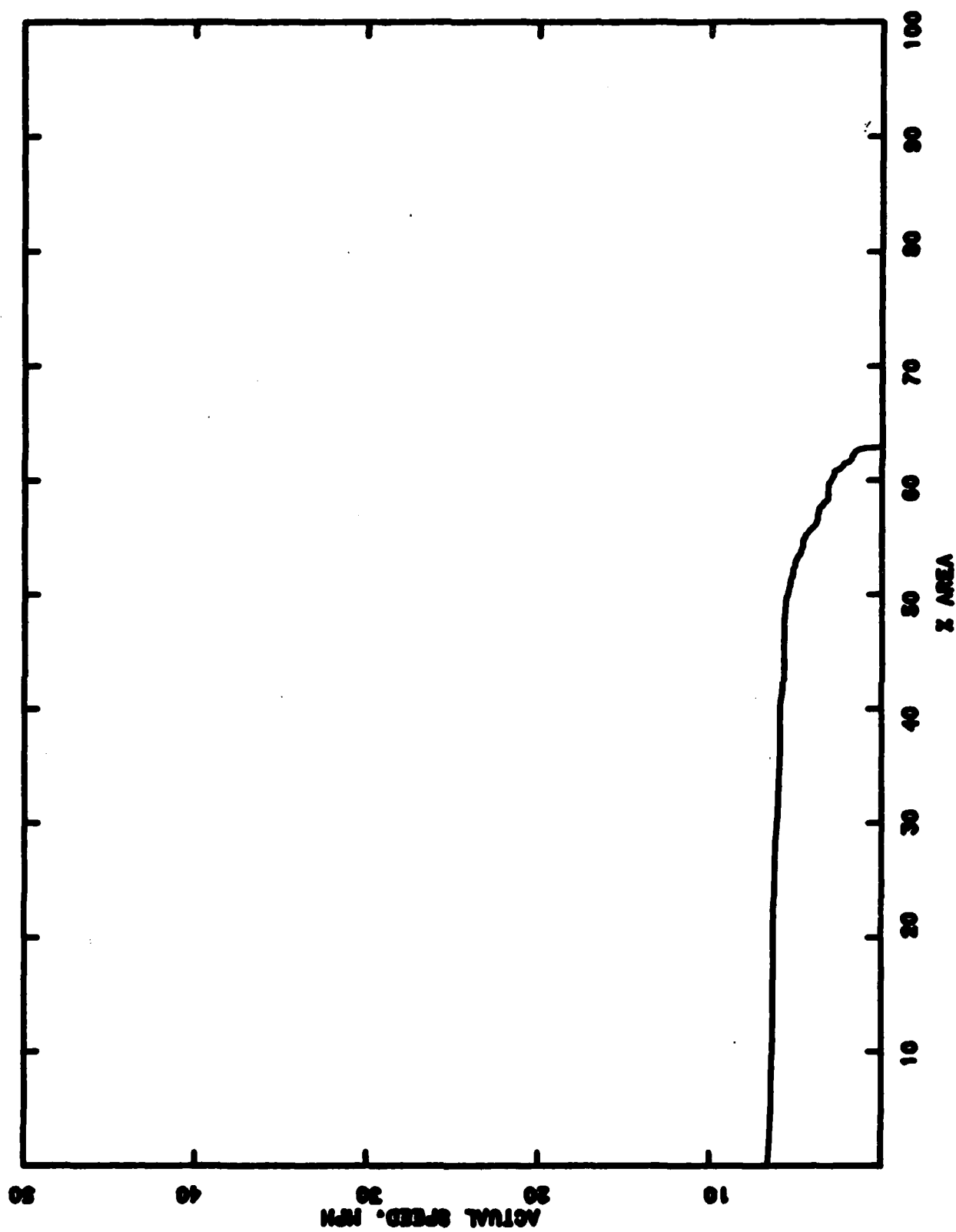
PERFORMANCE OF M816WR IN EUROPE2 WET



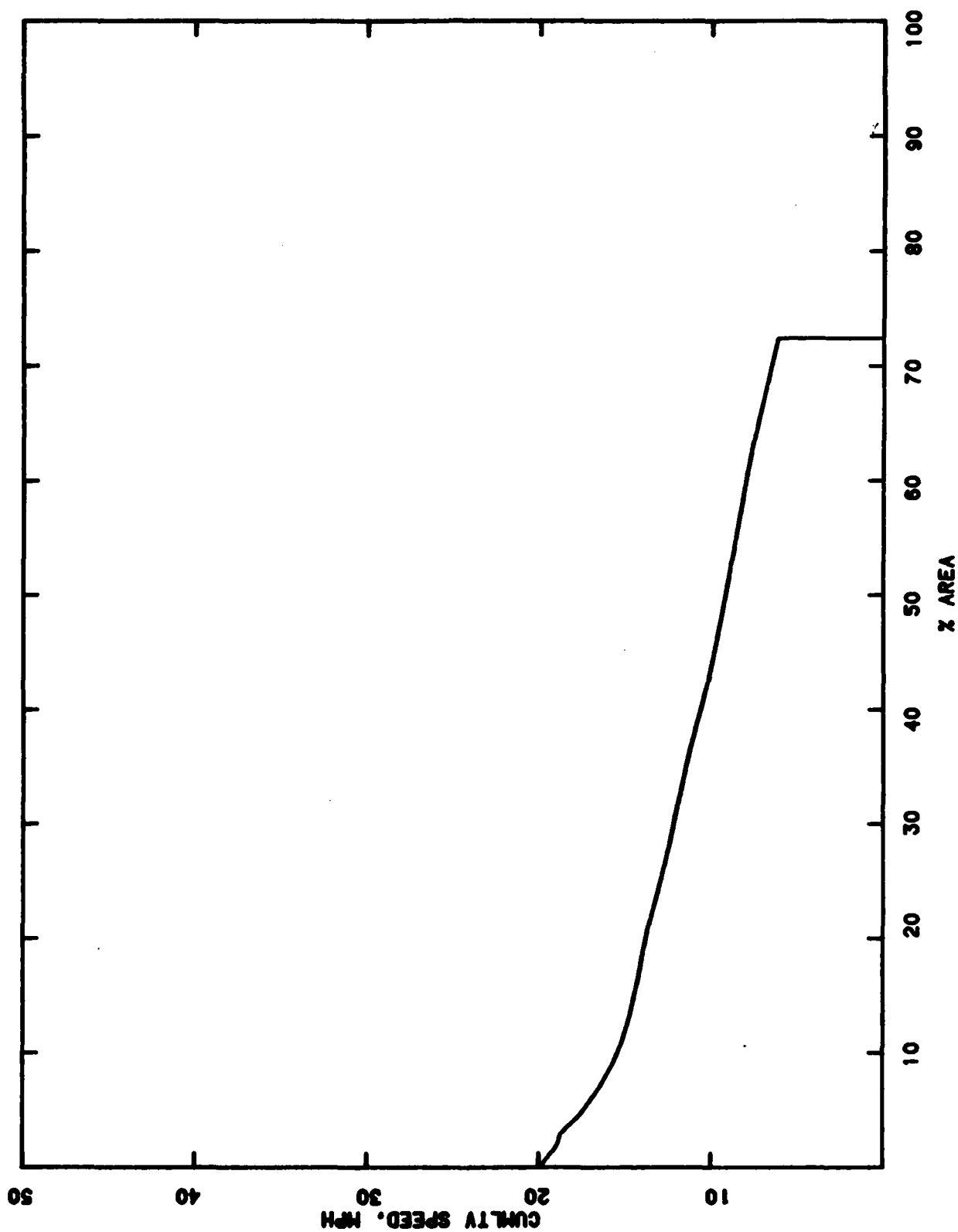
PERFORMANCE OF M816MR IN EUROPE2 SNOW



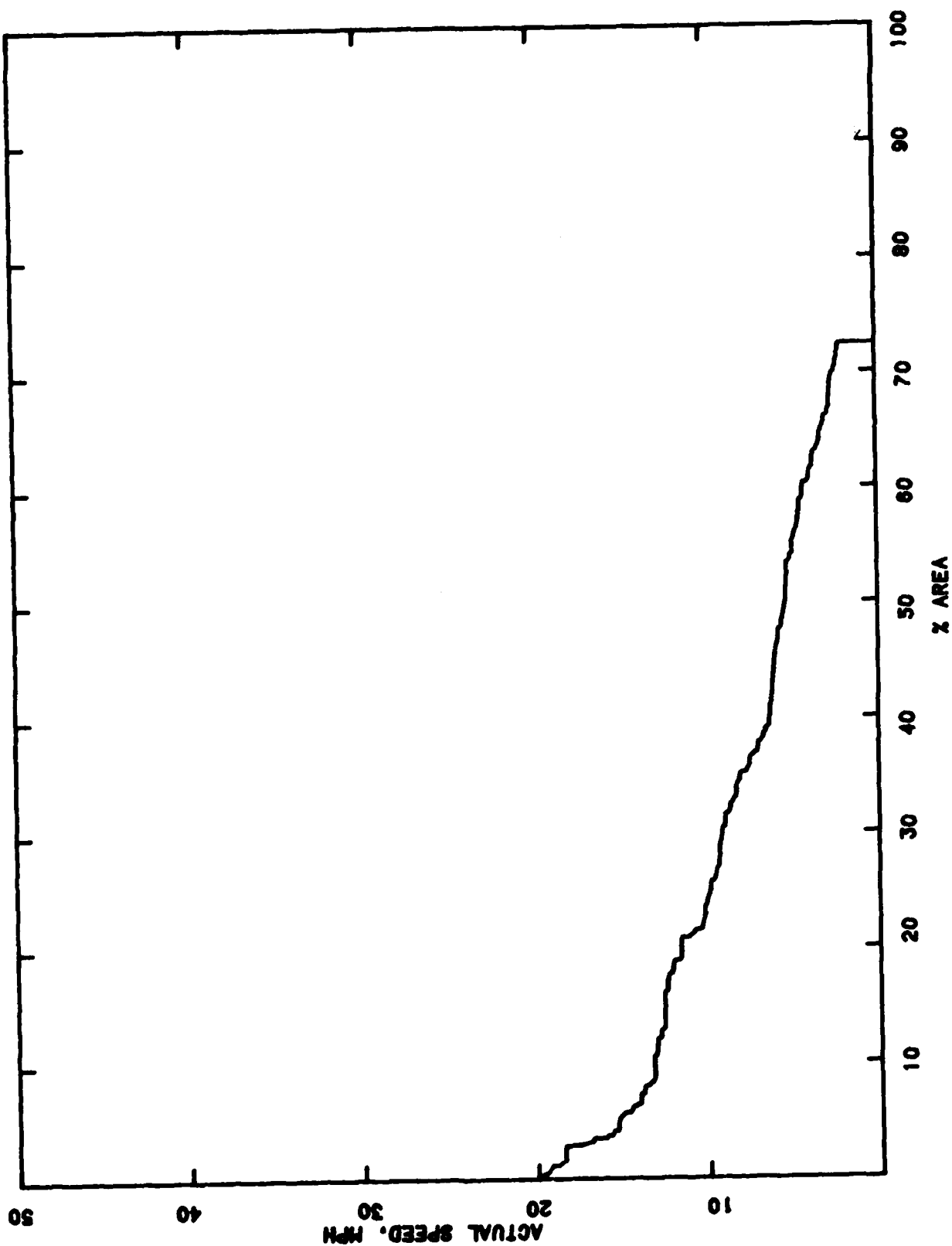
PERFORMANCE OF Y816WR IN EUROPE2 SNOW



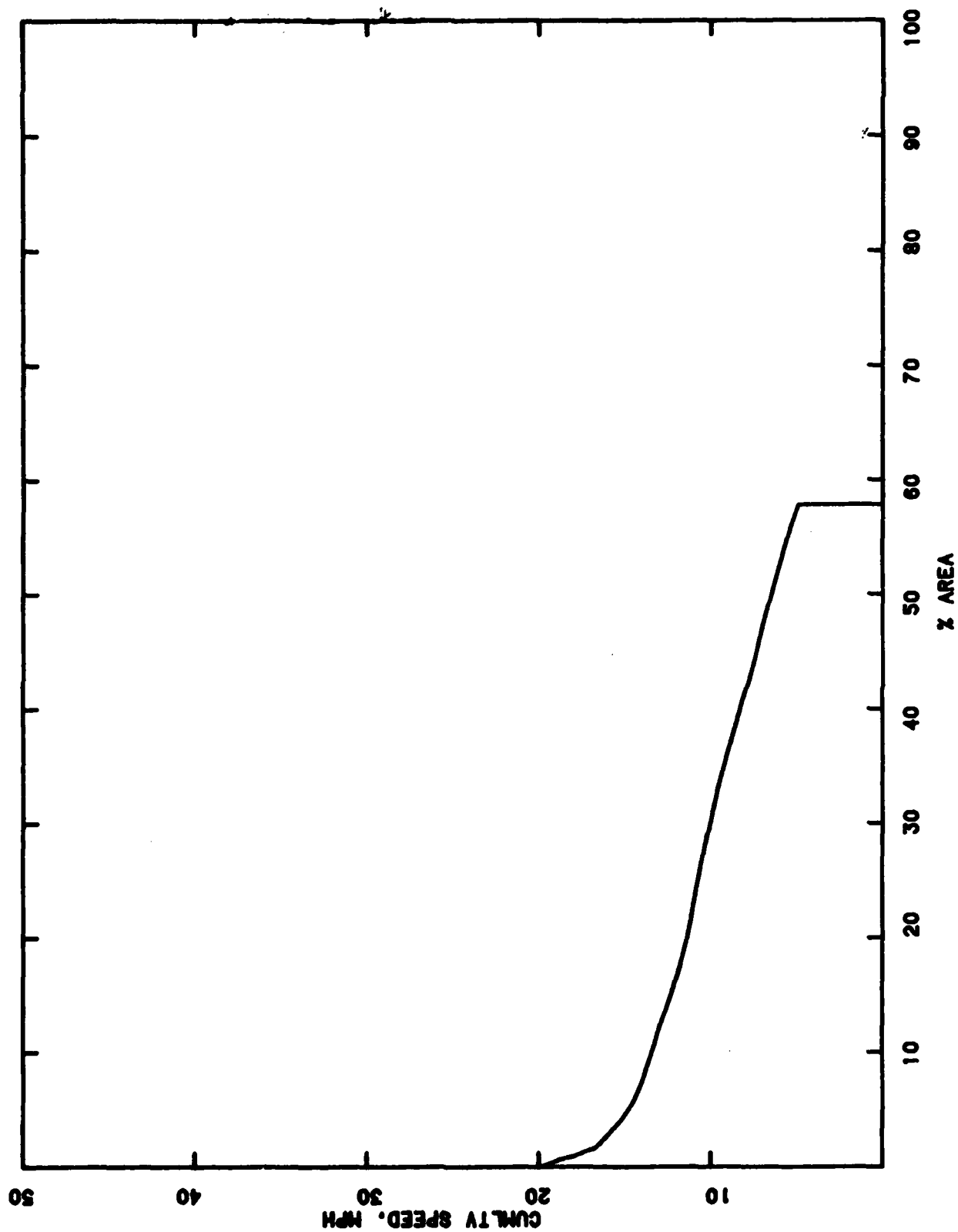
PERFORMANCE OF M816VR IN MIDEAST1 DRY



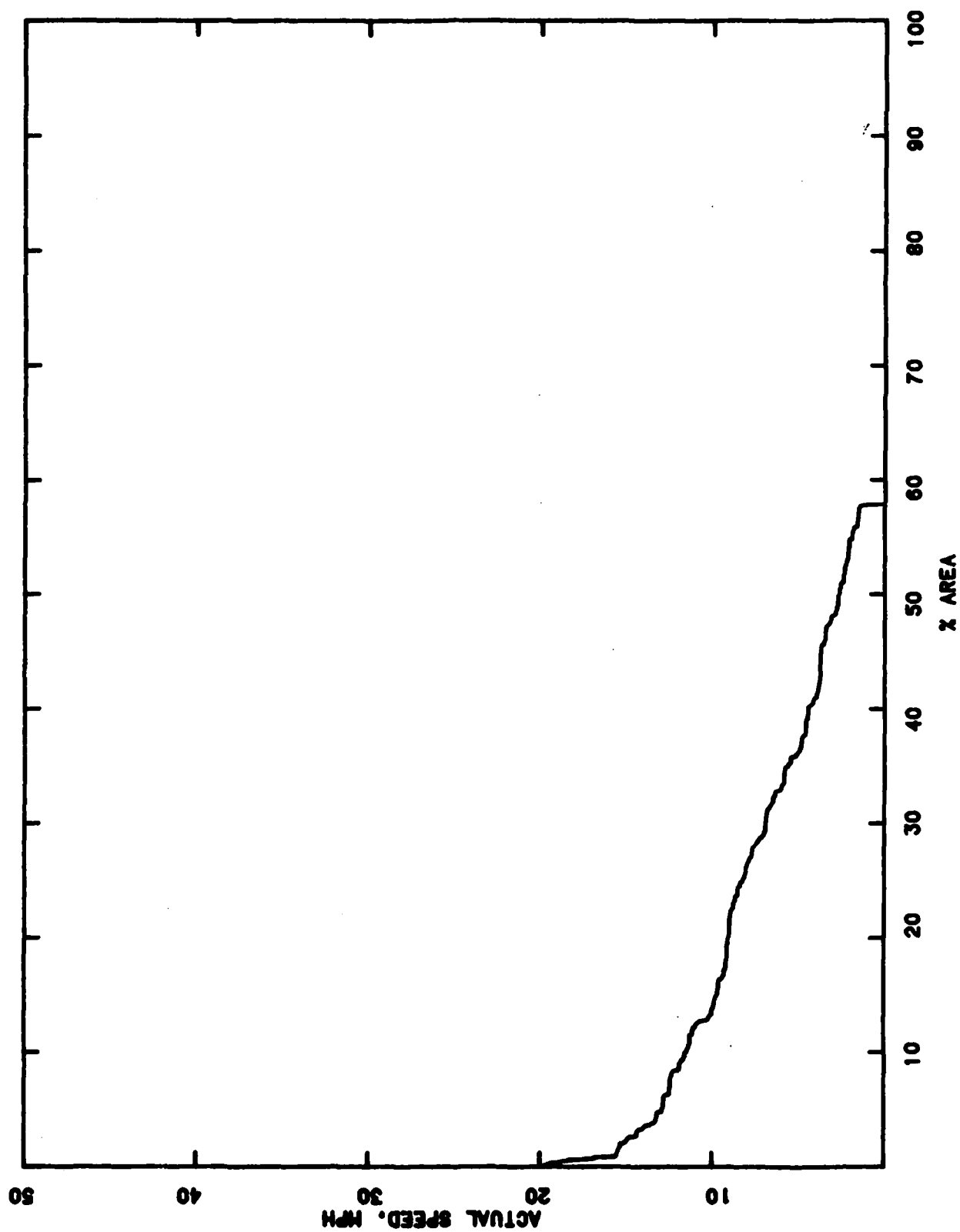
PERFORMANCE OF M816VR IN MIDEAST1 DRY



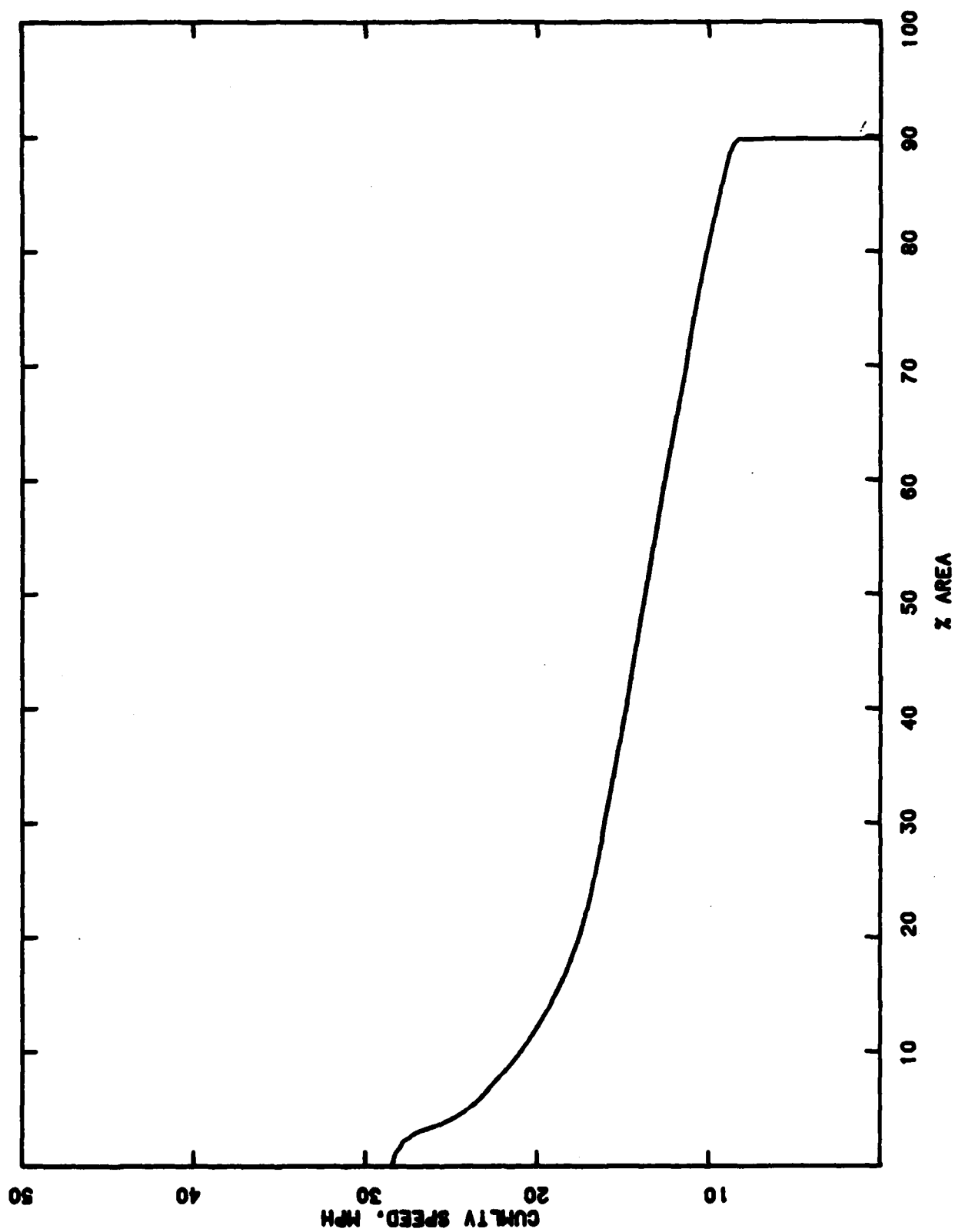
PERFORMANCE OF M816WR IN MIDEAST1 WET



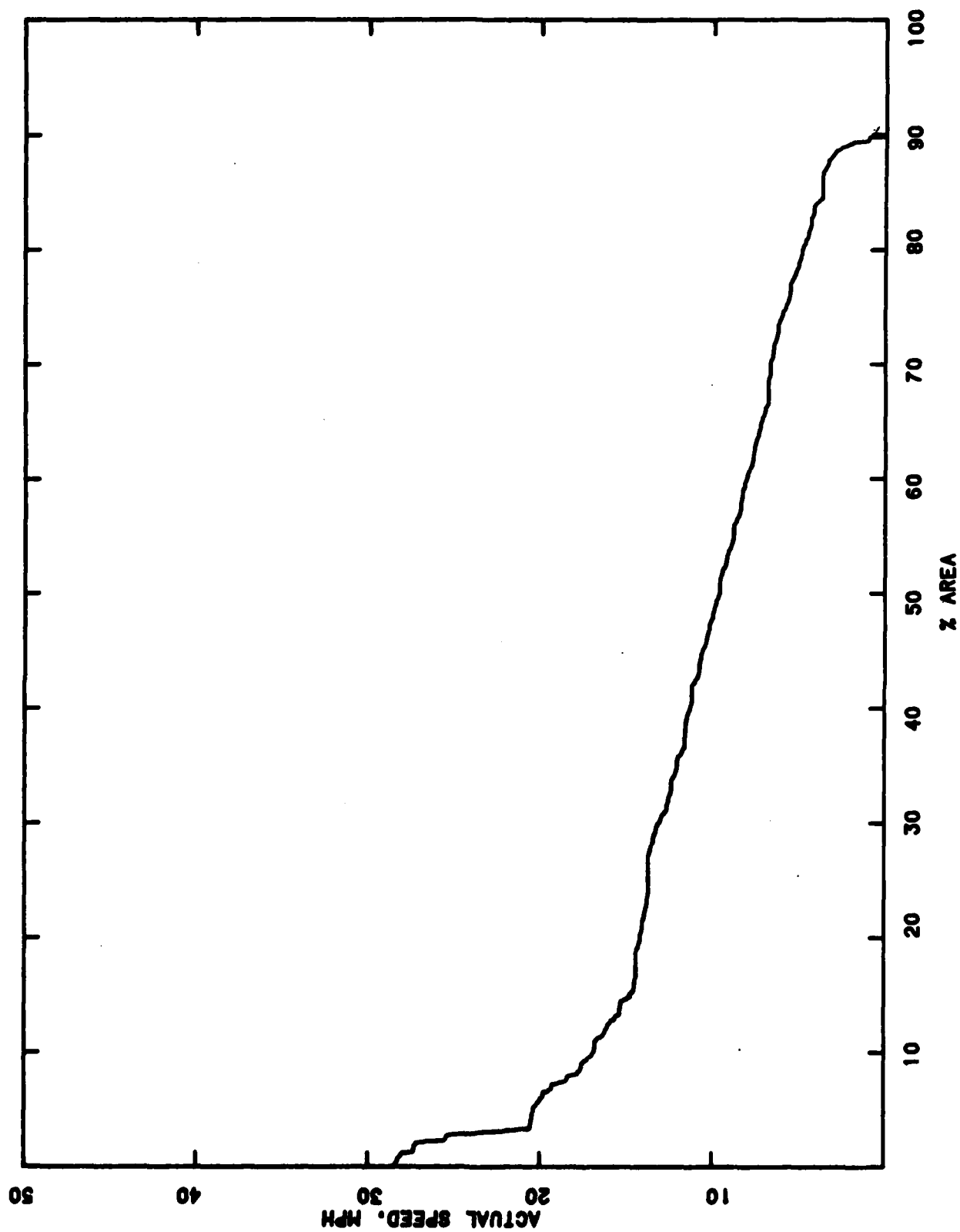
PERFORMANCE OF M816VR IN MIDEAST1 WET



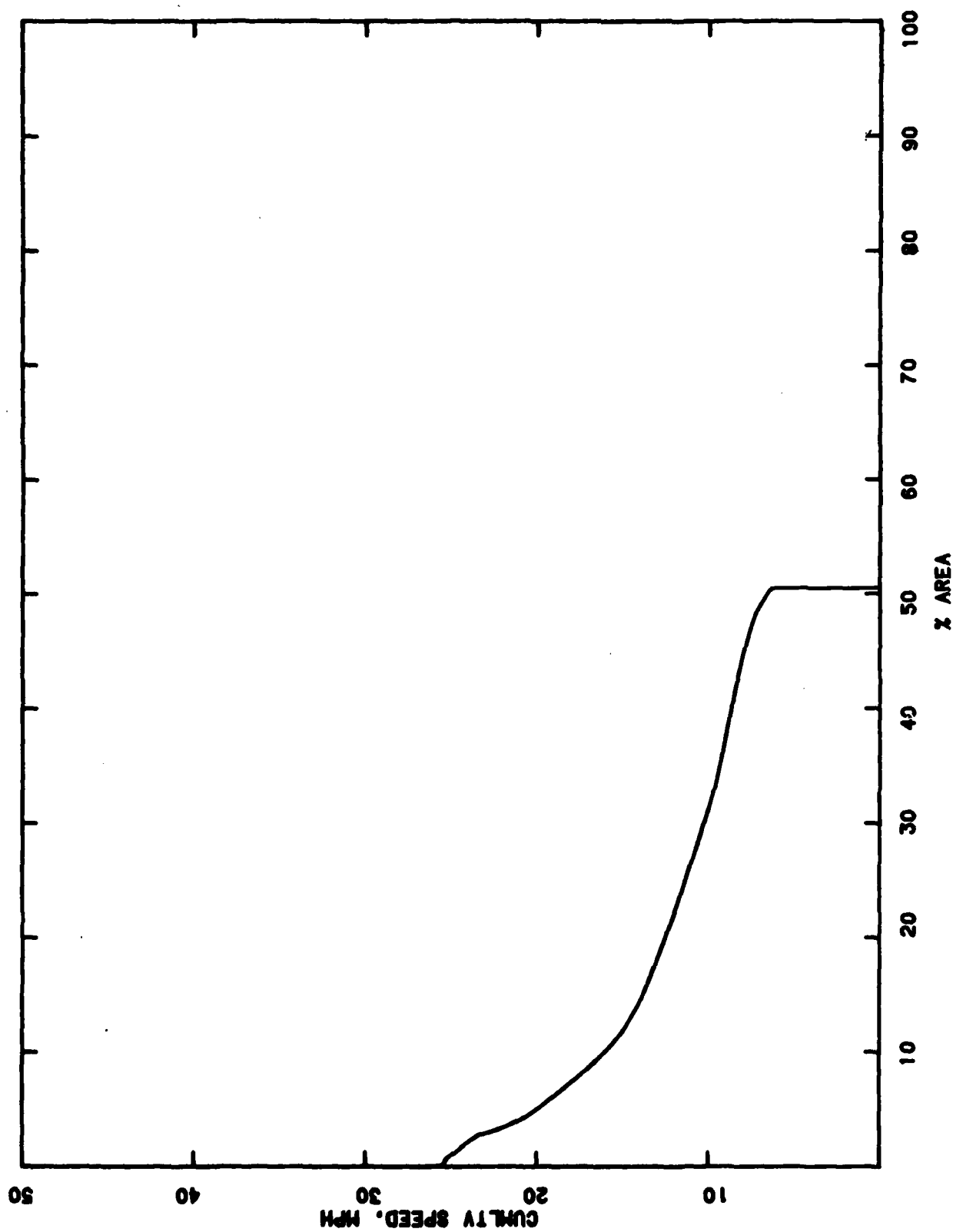
PERFORMANCE OF M816116 IN EUROPE1 DRY



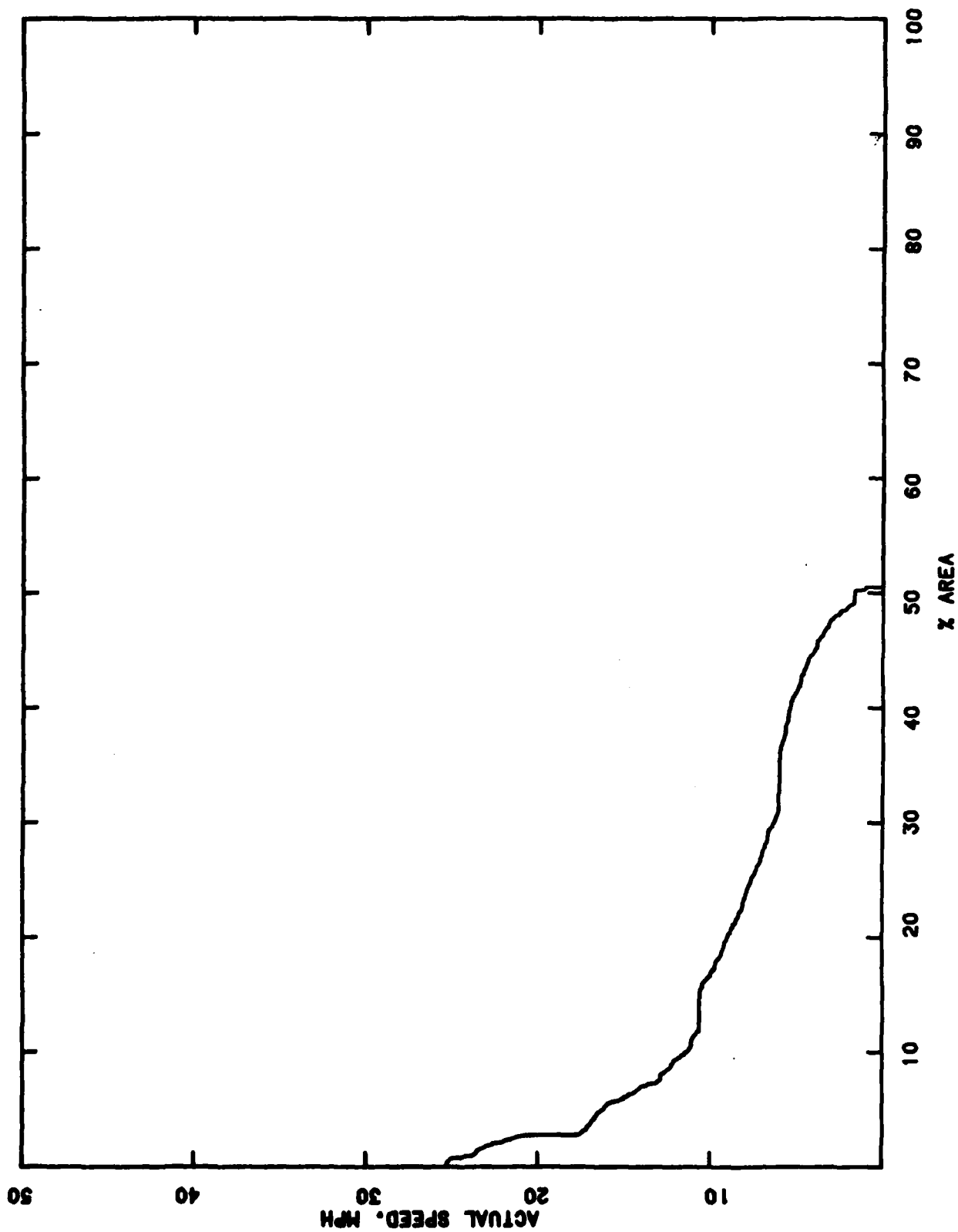
PERFORMANCE OF M816116 IN EUROPE1 DRY



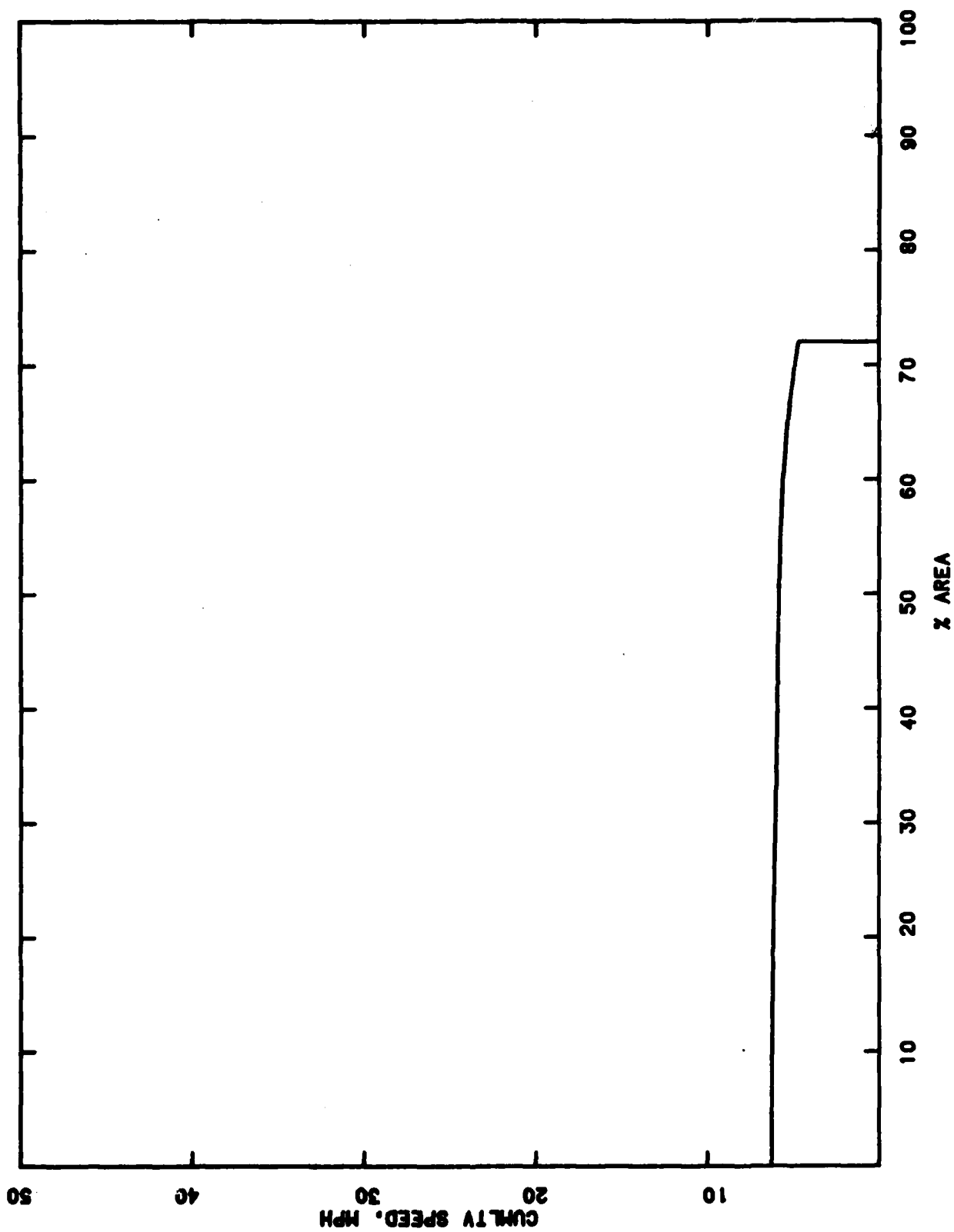
PERFORMANCE OF M816116 IN EUROPE1 WET



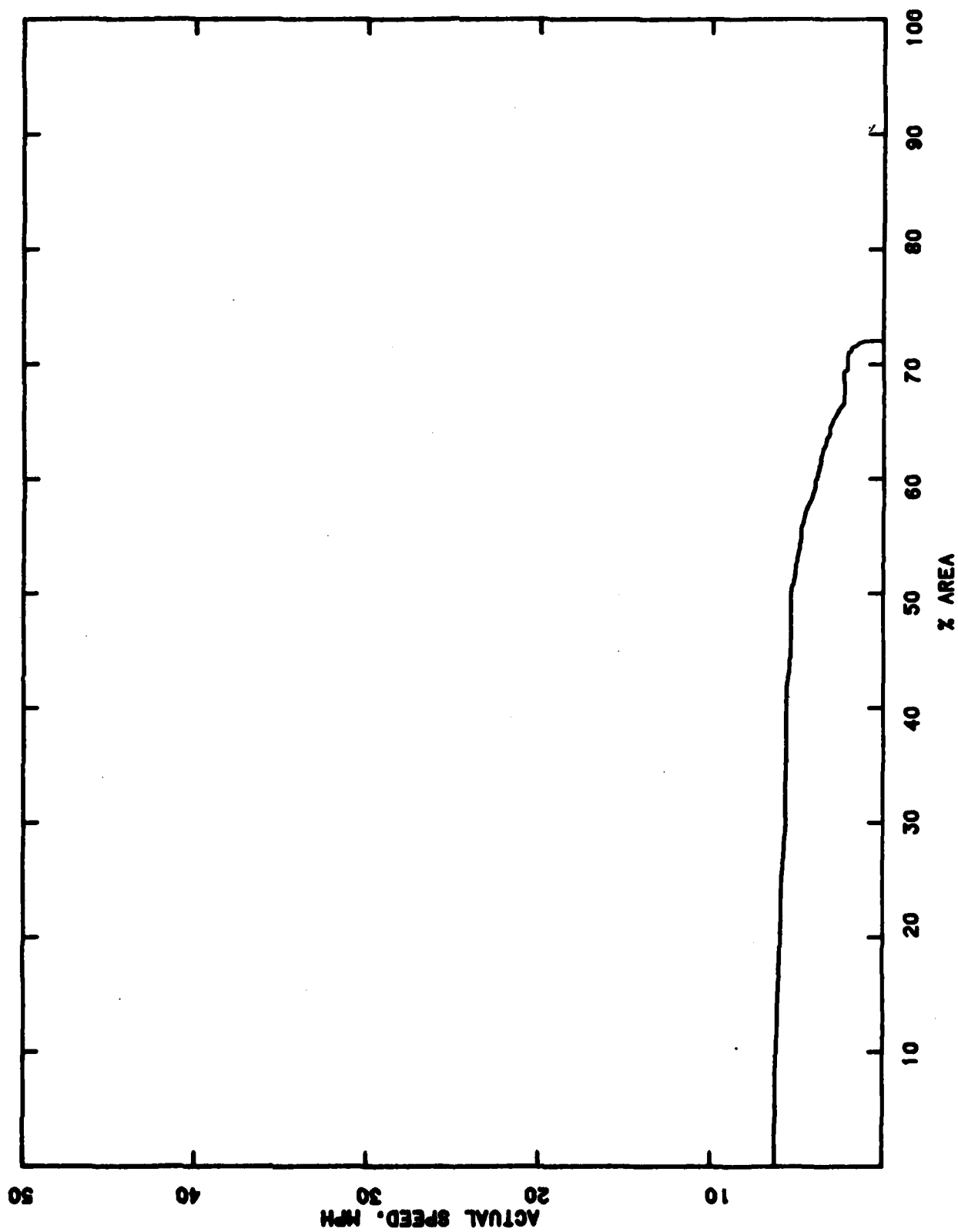
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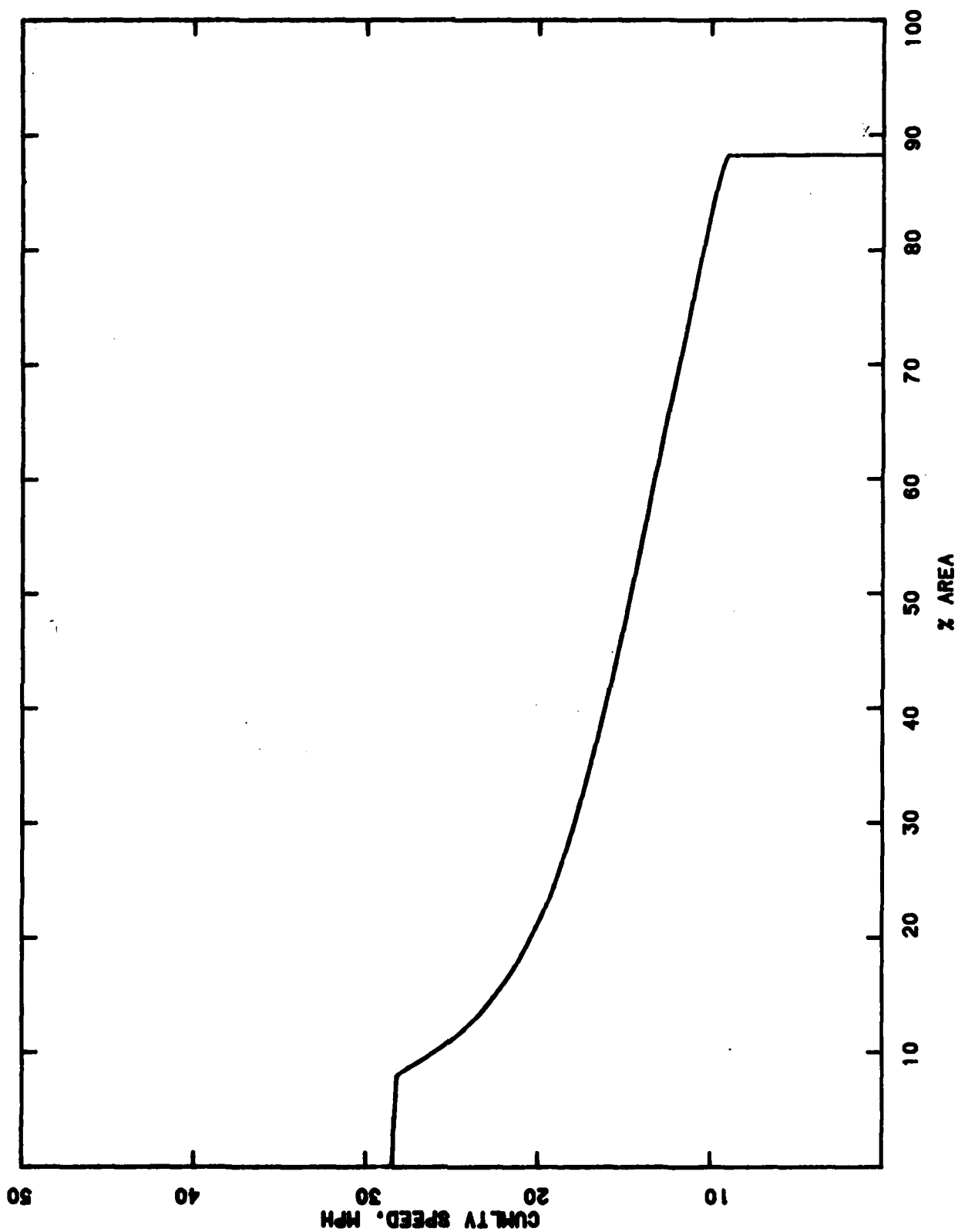
PERFORMANCE OF M816116 IN EUROPE1 SNOW



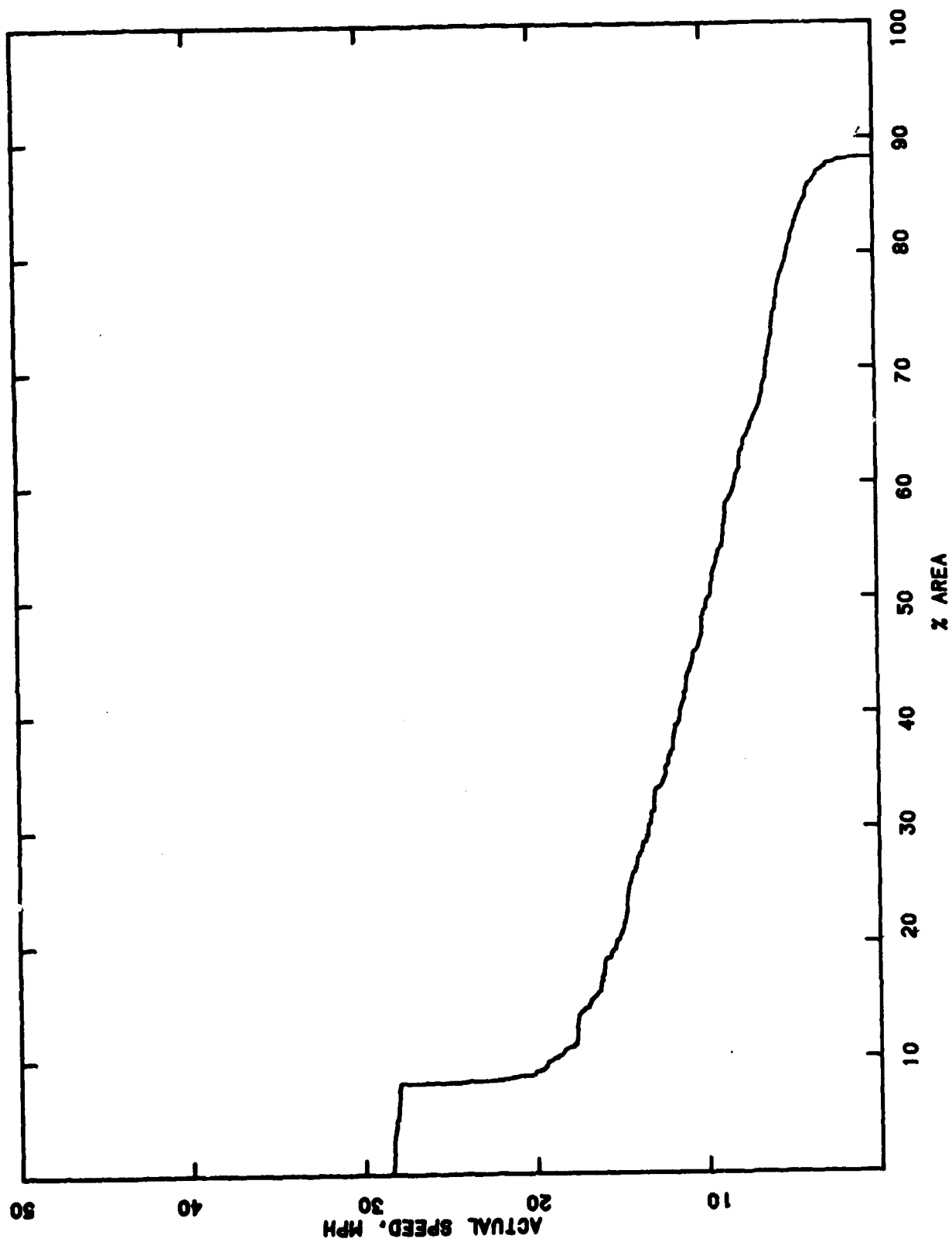
PERFORMANCE OF M816116 IN EUROPE1 SNOW



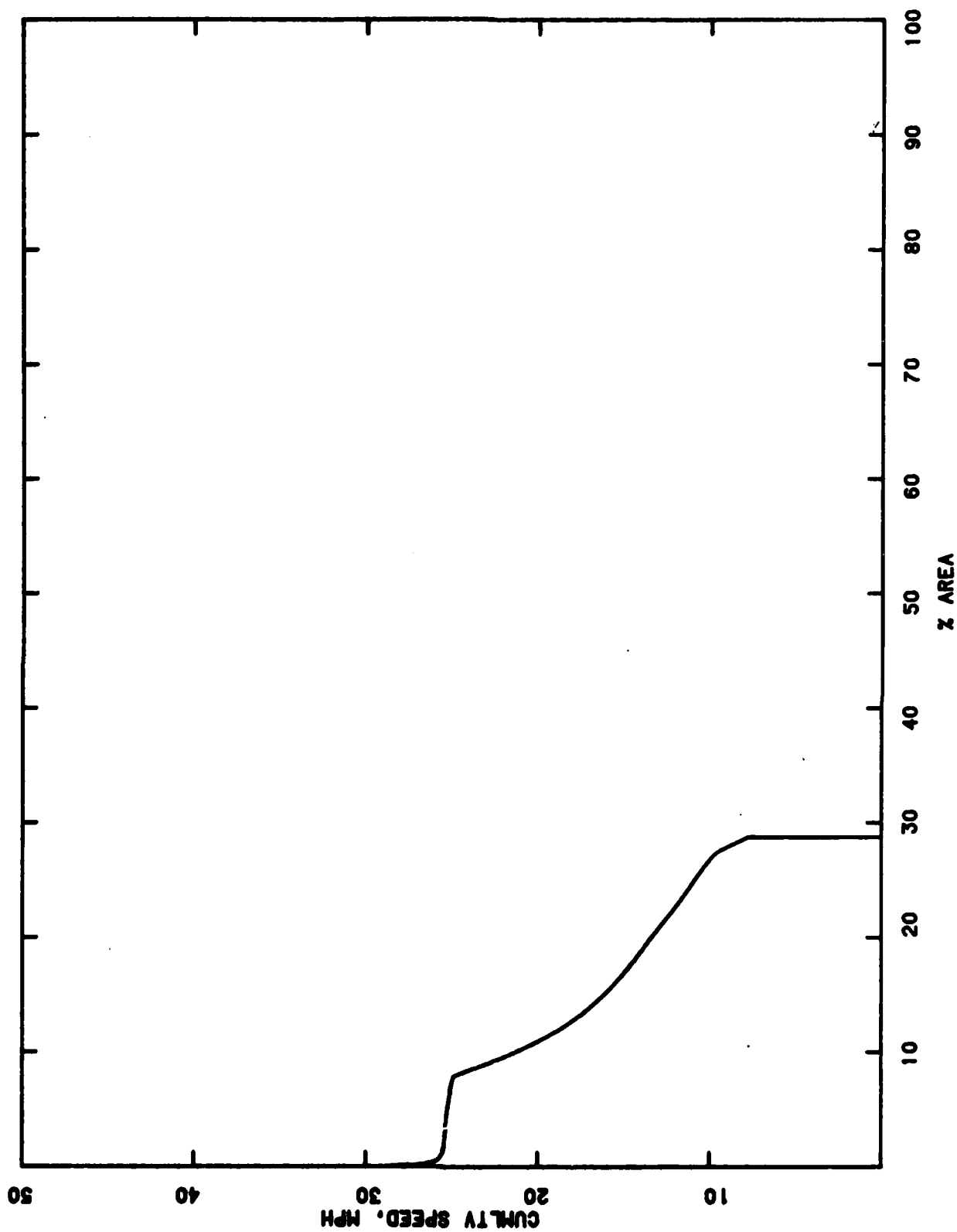
PERFORMANCE OF M816116 IN EUROPE2 DRY



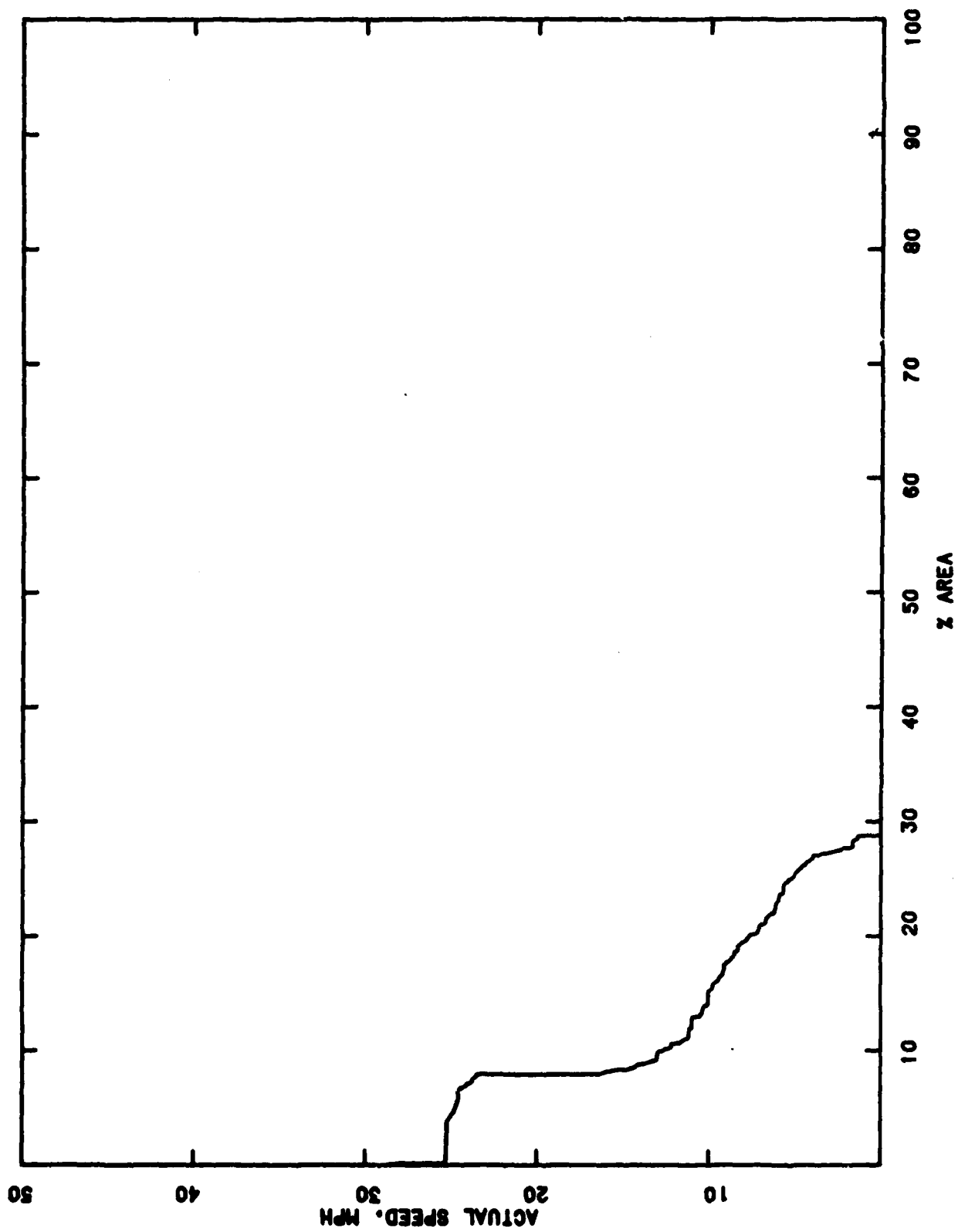
PERFORMANCE OF M816116 IN EUROPE2 DRY



PERFORMANCE OF M816116 IN EUROPE2 WET



PERFORMANCE OF M816116 IN EUROPE2 WET



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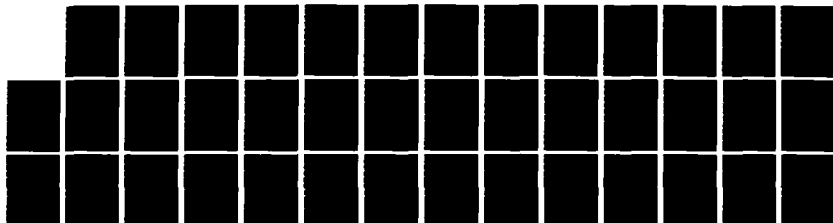
MOBILITY AND TRANSPORTATION ANALYSIS IN SUPPORT OF THE
LIGHT ATTACK BATTAL (U) ARMY MATERIEL SYSTEMS ANALYSIS
ACTIVITY ABERDEEN PROVING GROU. C R DIETZ ET AL.
MAY 83 AMSAA-TR-374-VOL-2

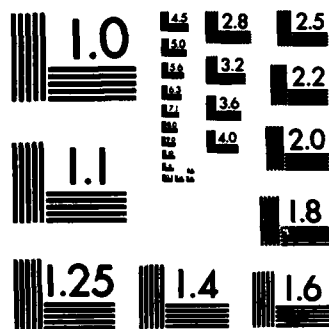
3/3

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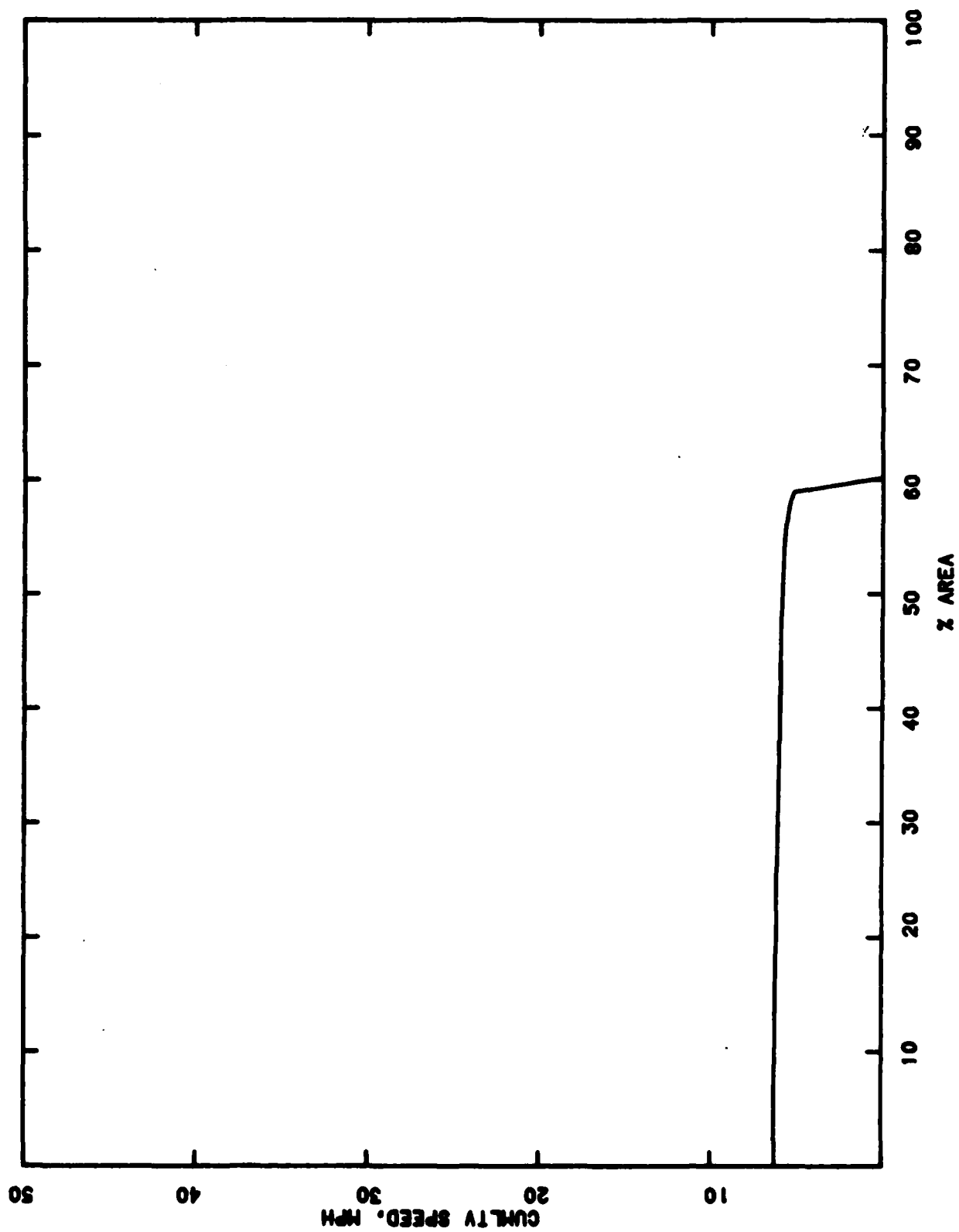
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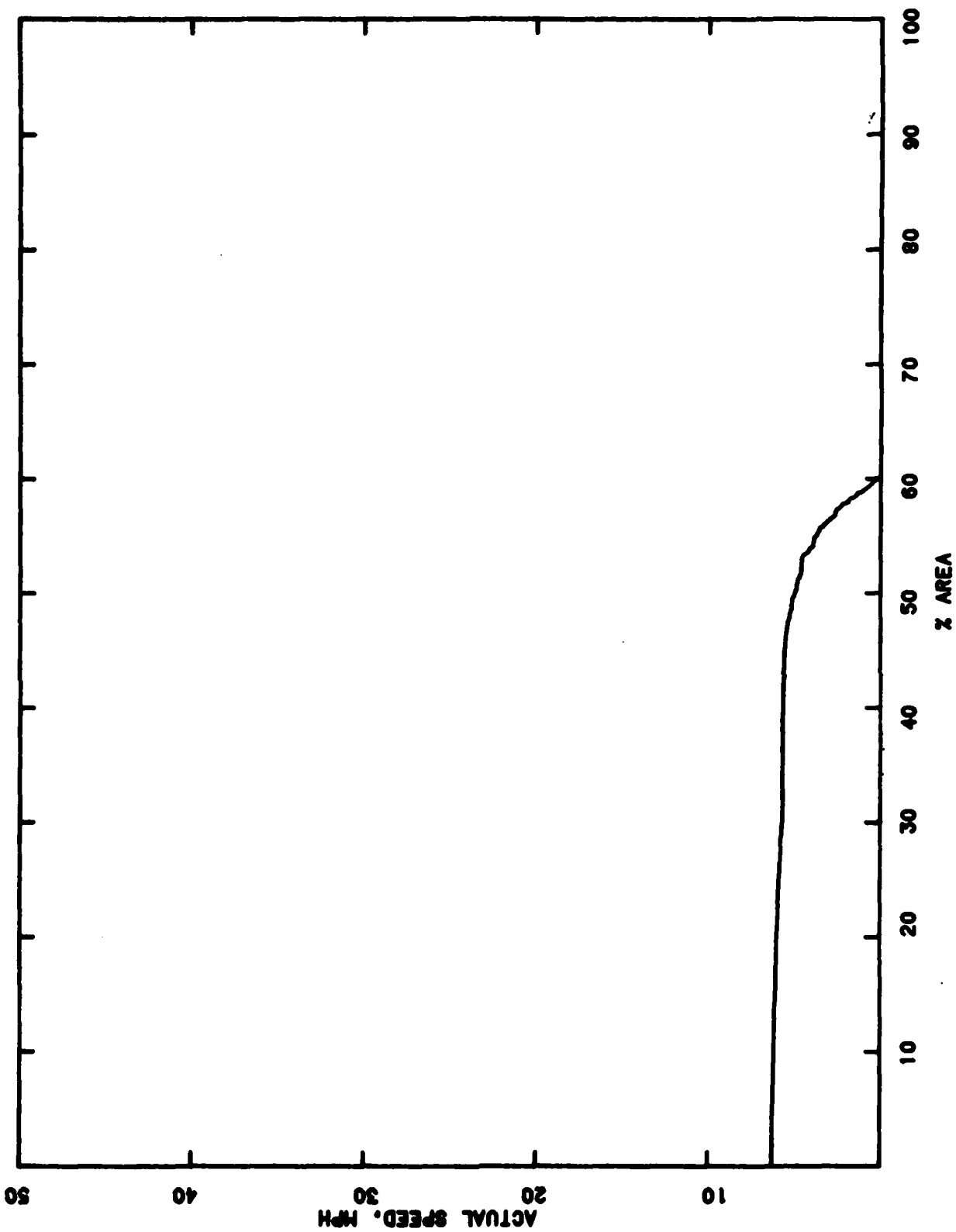


MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

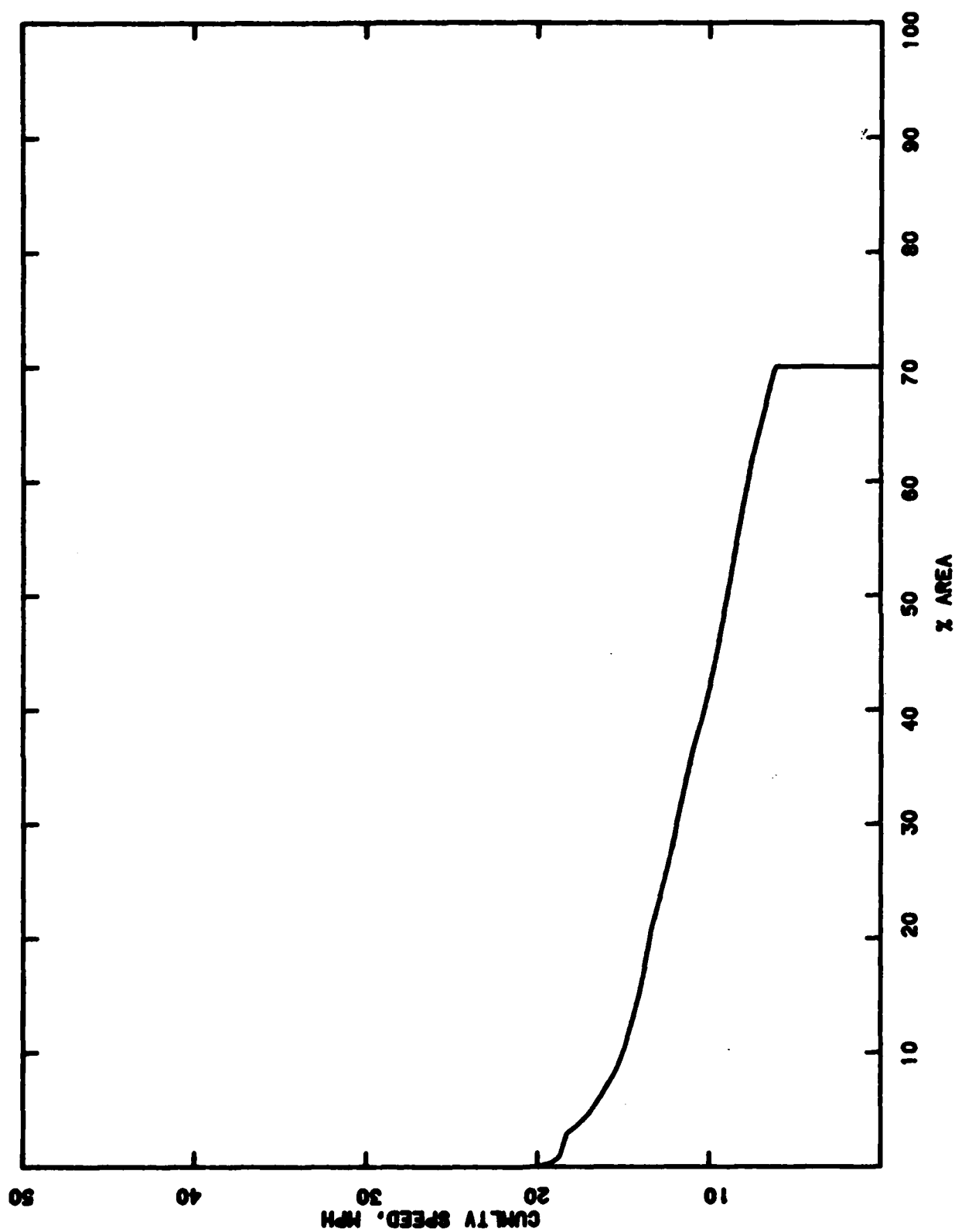
PERFORMANCE OF M816116 IN EUROPE2 SNOW



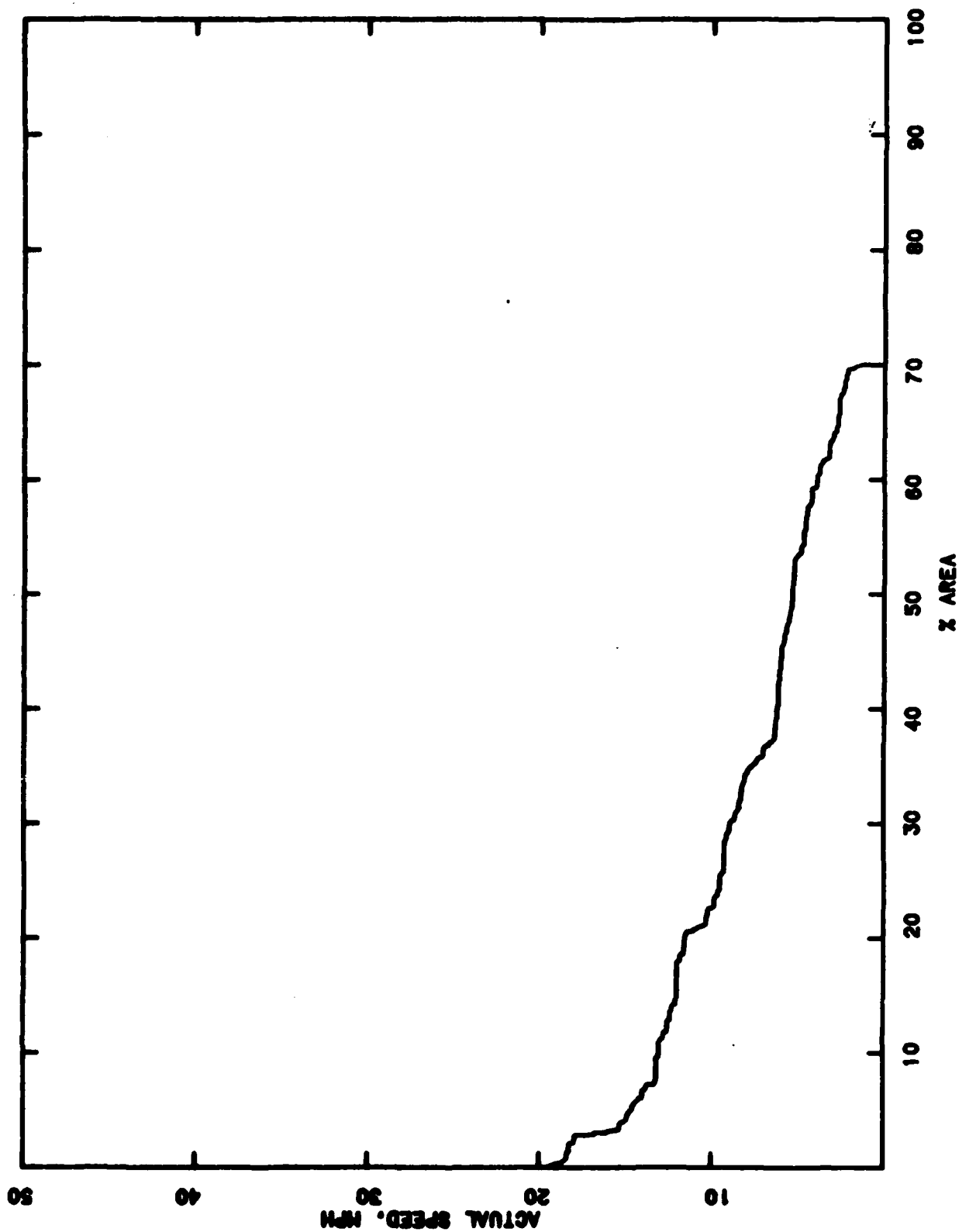
PERFORMANCE OF M816116 IN EUROPE2 SNOW



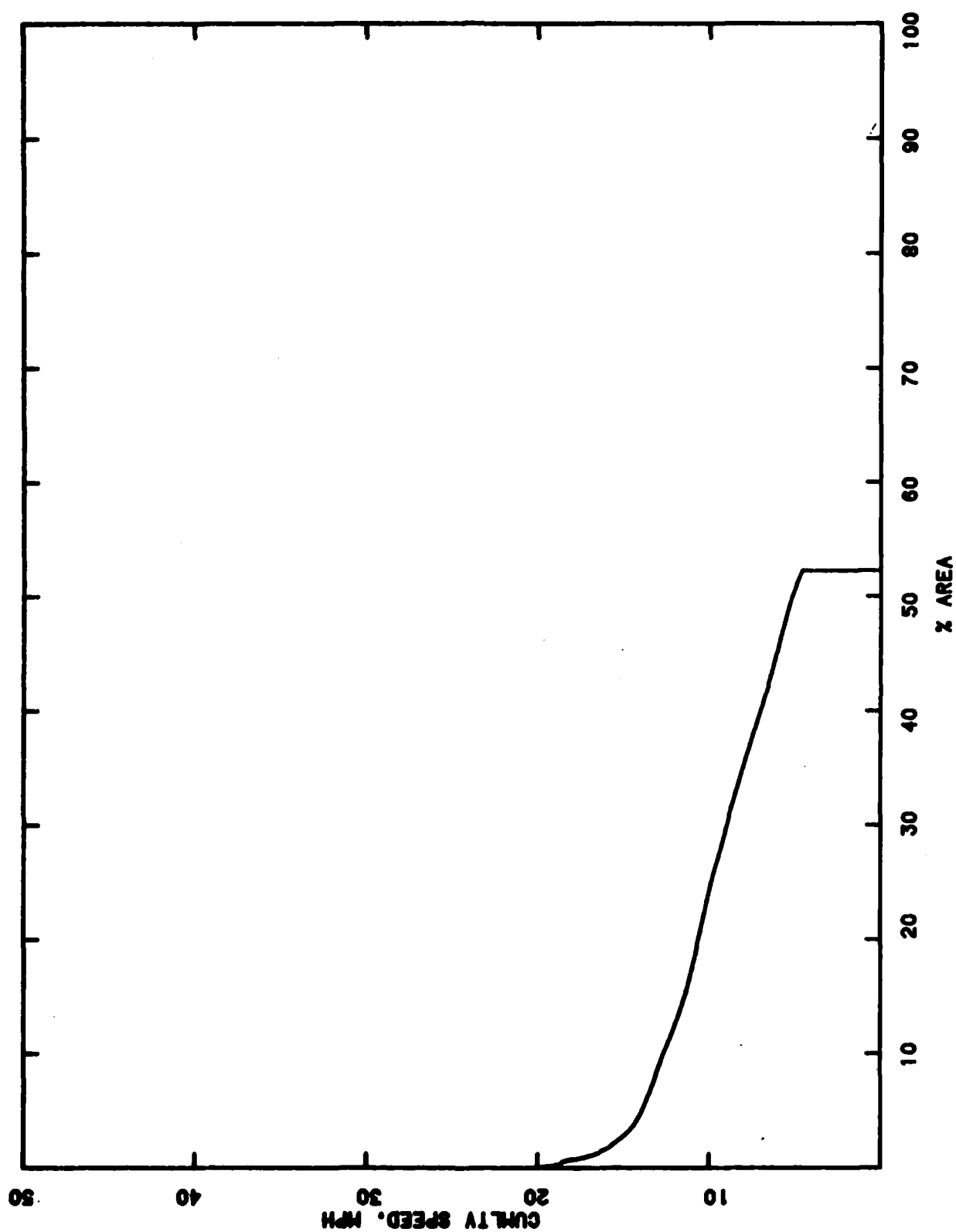
PERFORMANCE OF M816116 IN MIDEAST1 DRY



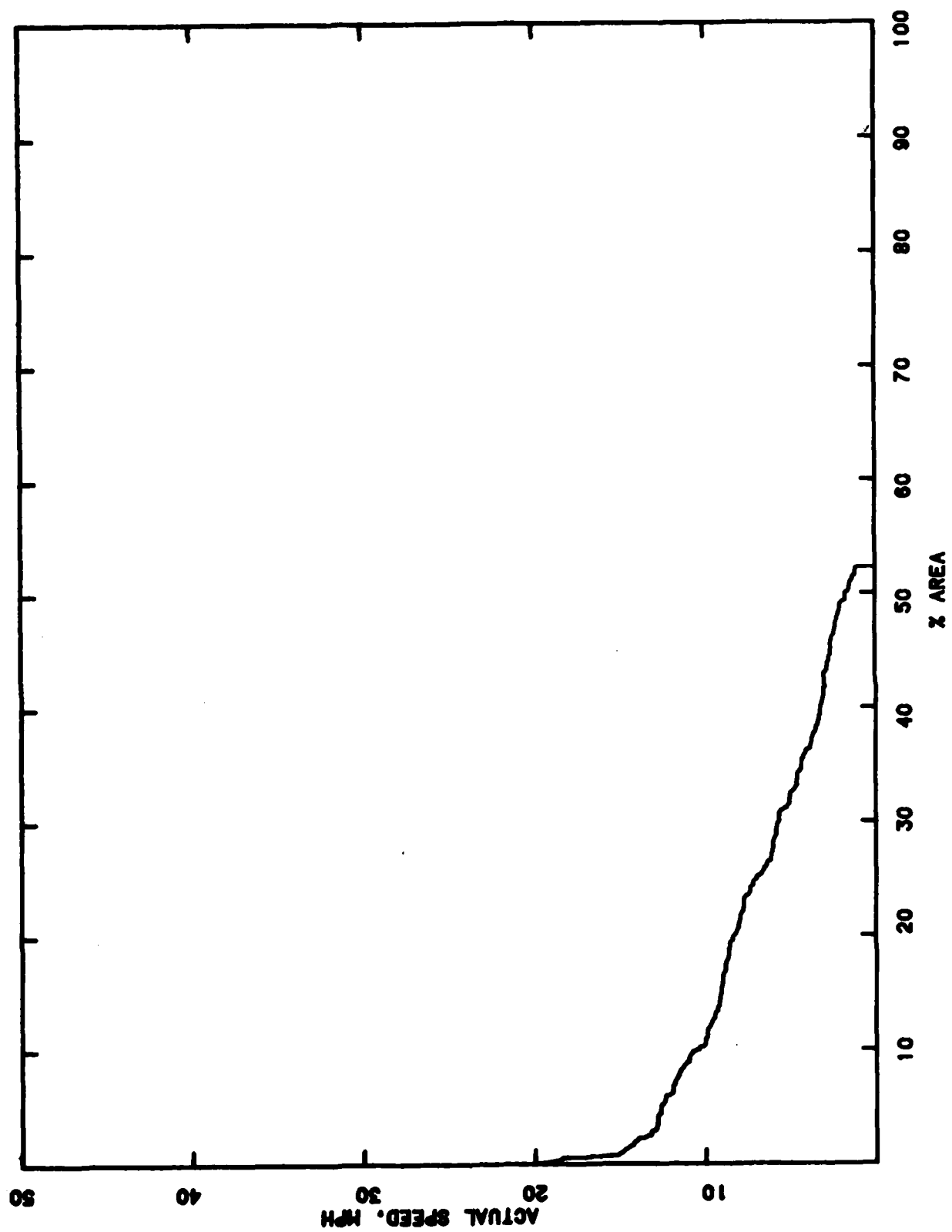
PERFORMANCE OF M816116 IN MIDEAST1 DRY



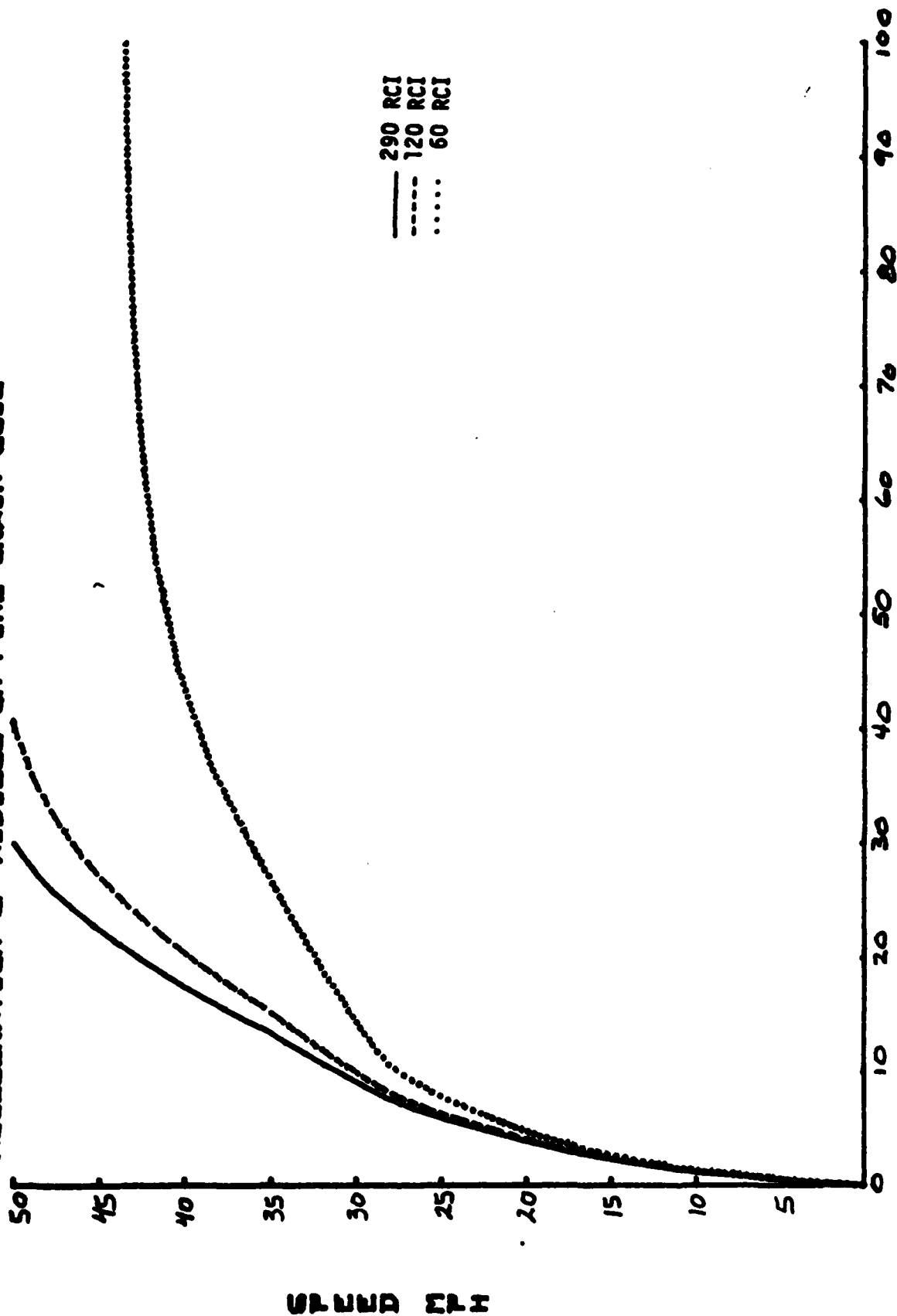
PERFORMANCE OF M816116 IN MIDEAST1 WET



PERFORMANCE OF M816116 IN MIDEAST1 WET



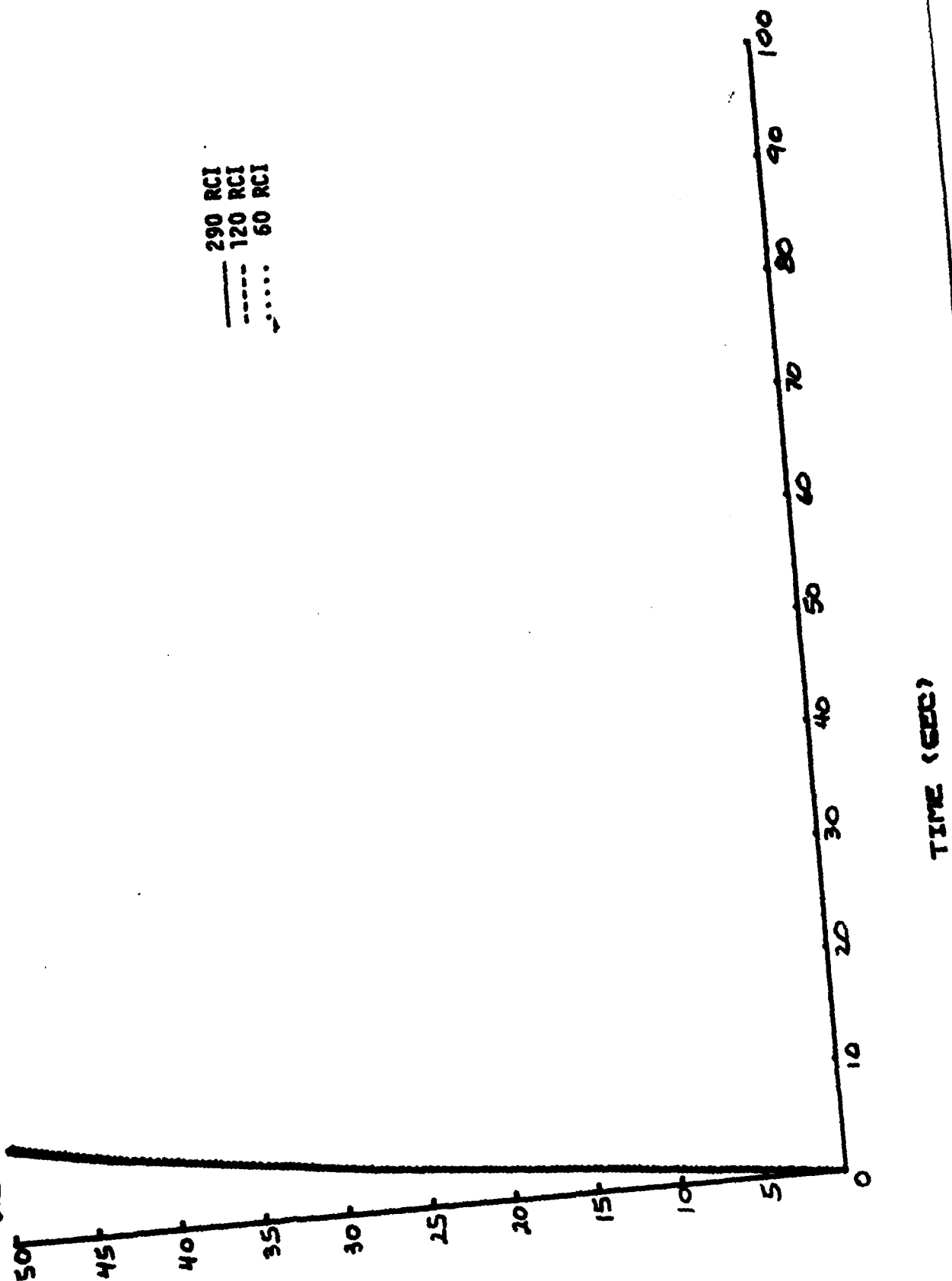
ACCELERATION OF AIDIESEL ON FINE GRAIN GOIL



TIME (SEC)

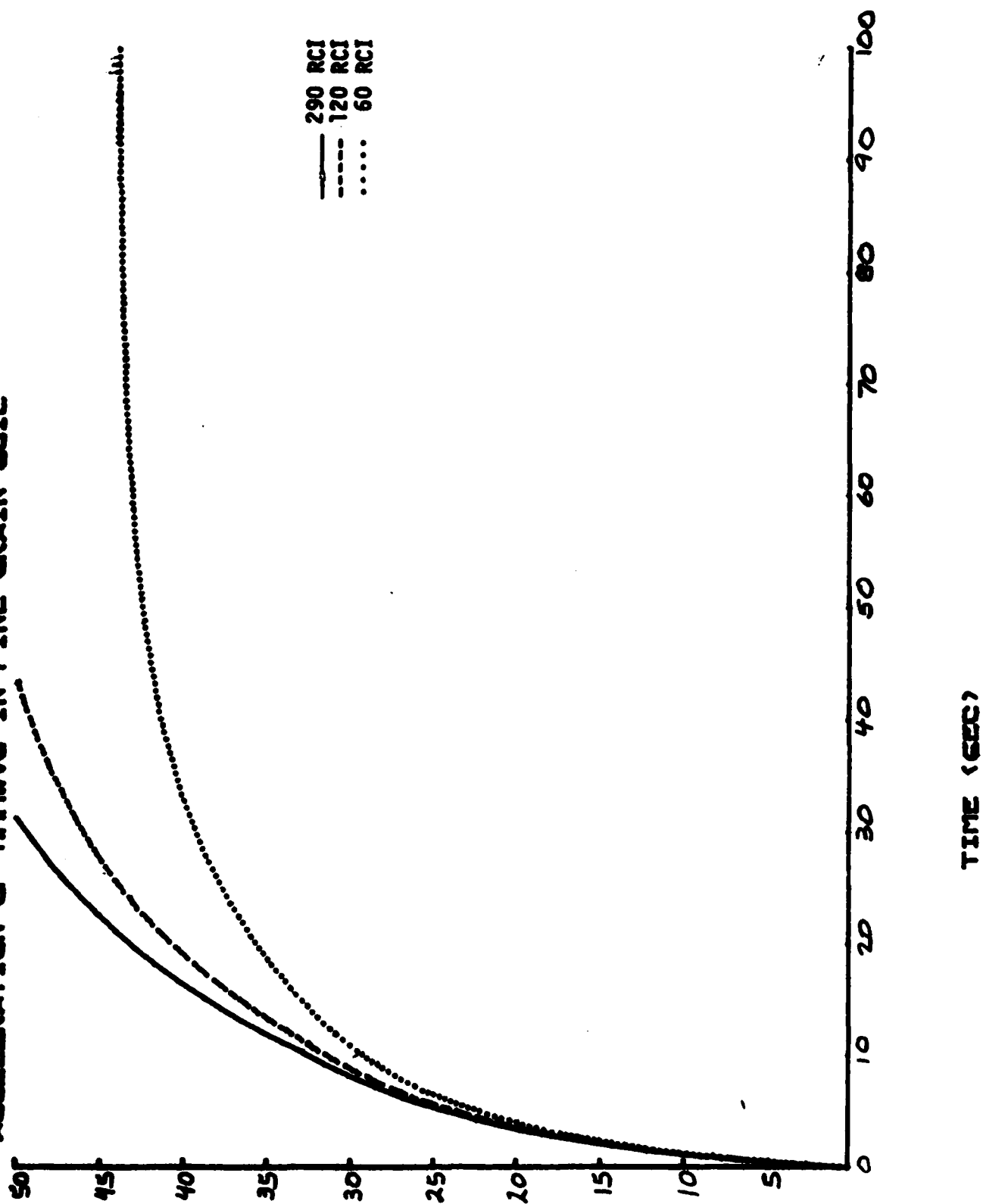
SPEED MPH

ACCELERATION OF FAY ON FINE GRAIN COIL



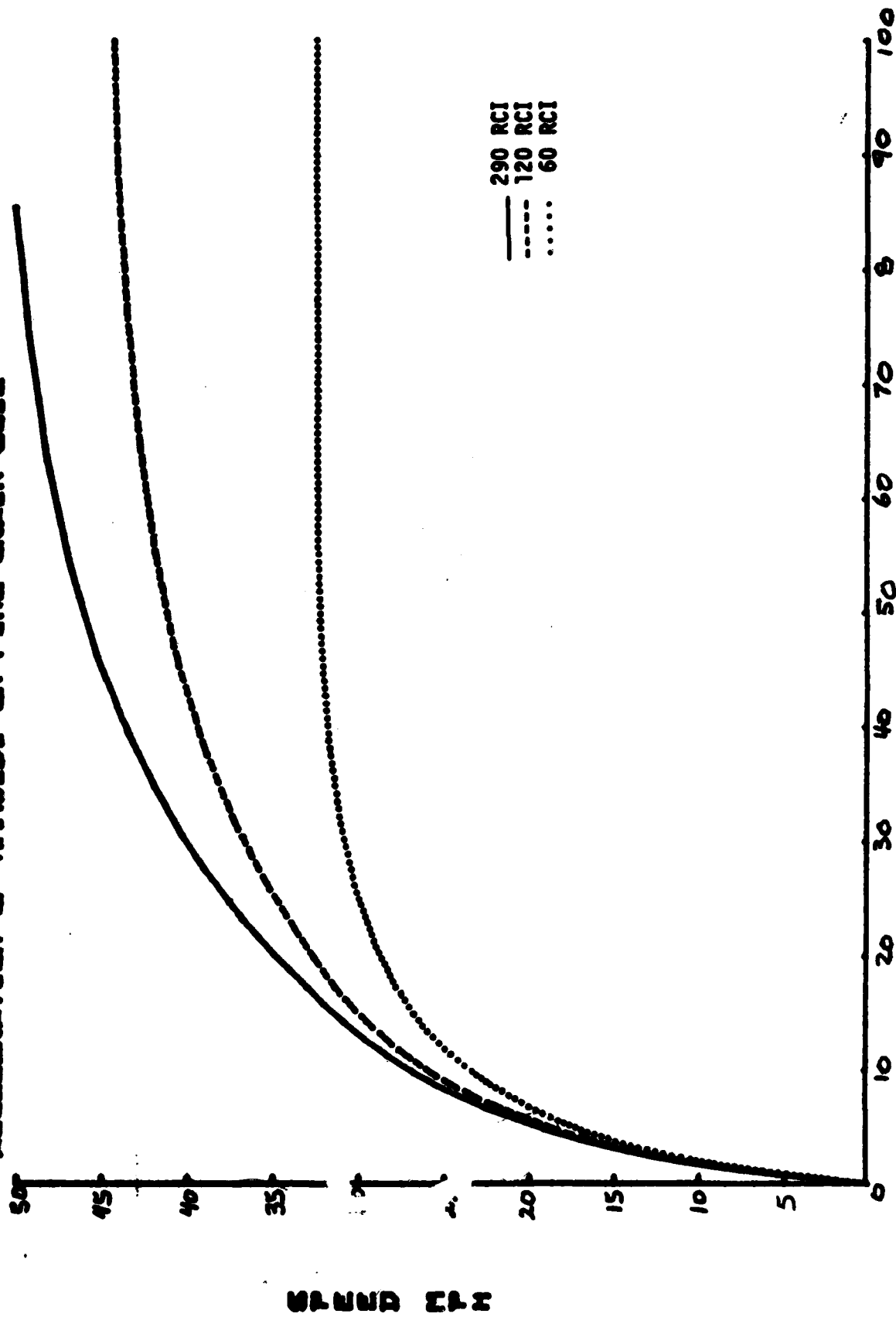
195

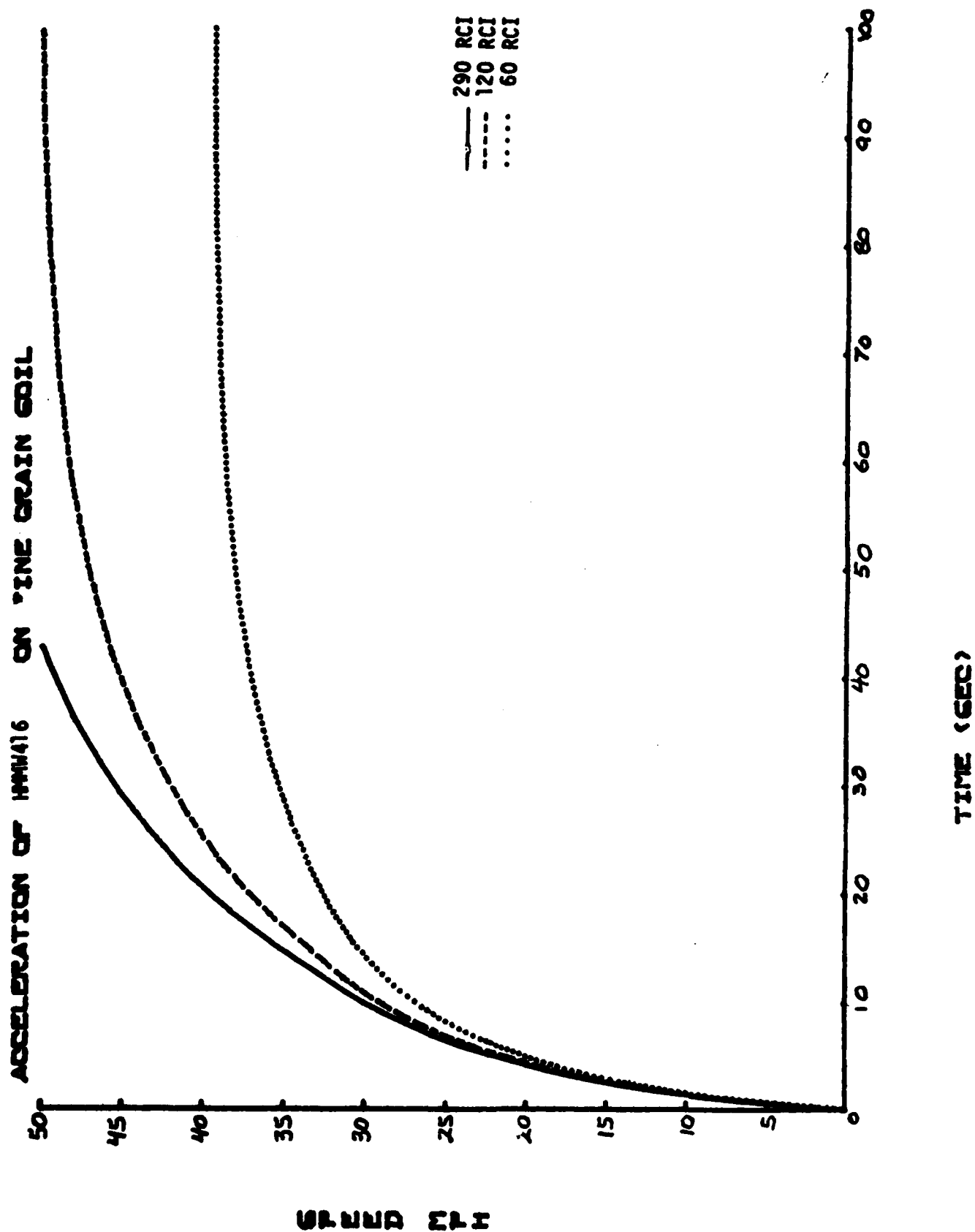
ACCELERATION OF HITTING IN FINE GRAIN SOIL



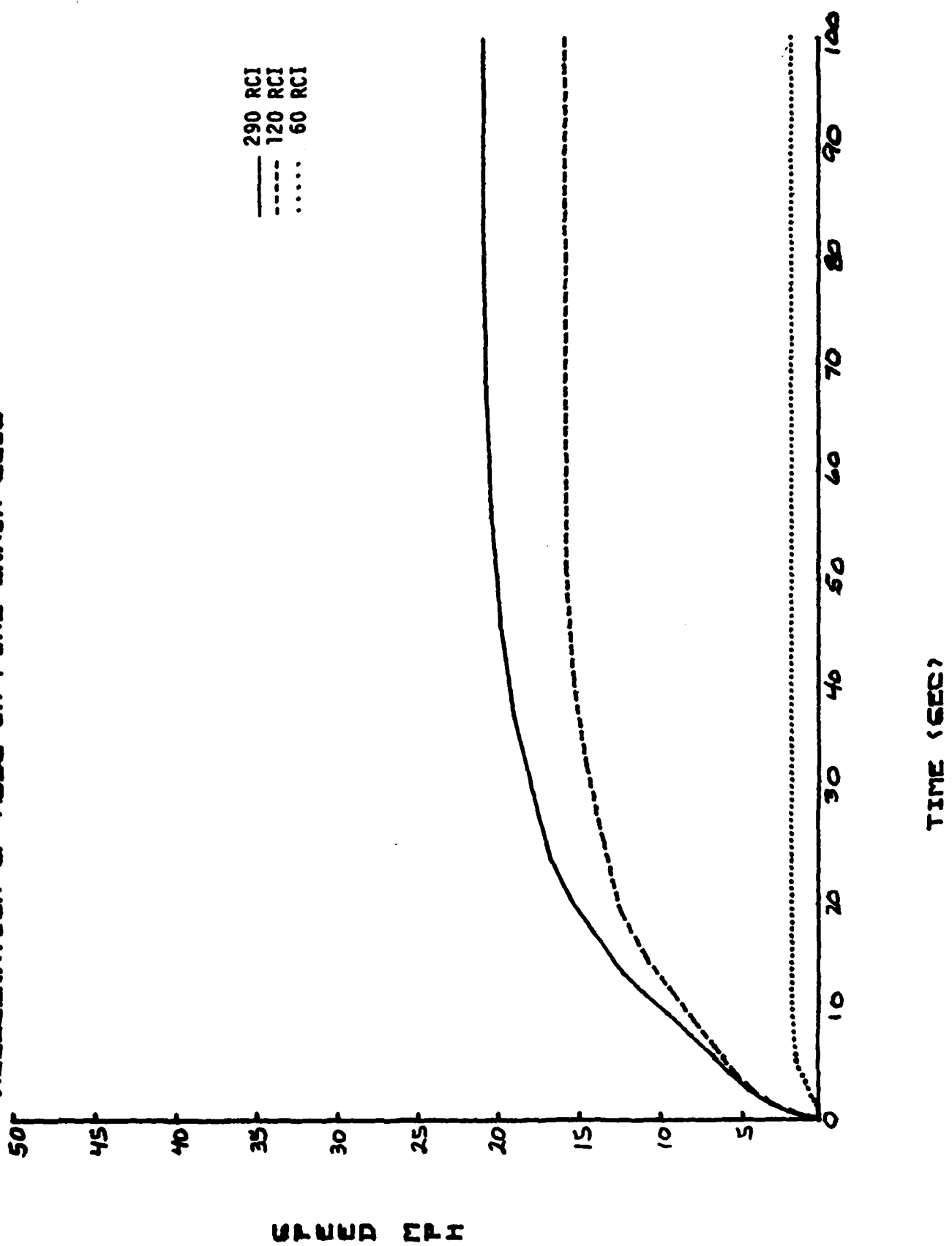
SPEND EPI

ACCELERATION OF HYDROGEN ON FINE GRAIN COIL



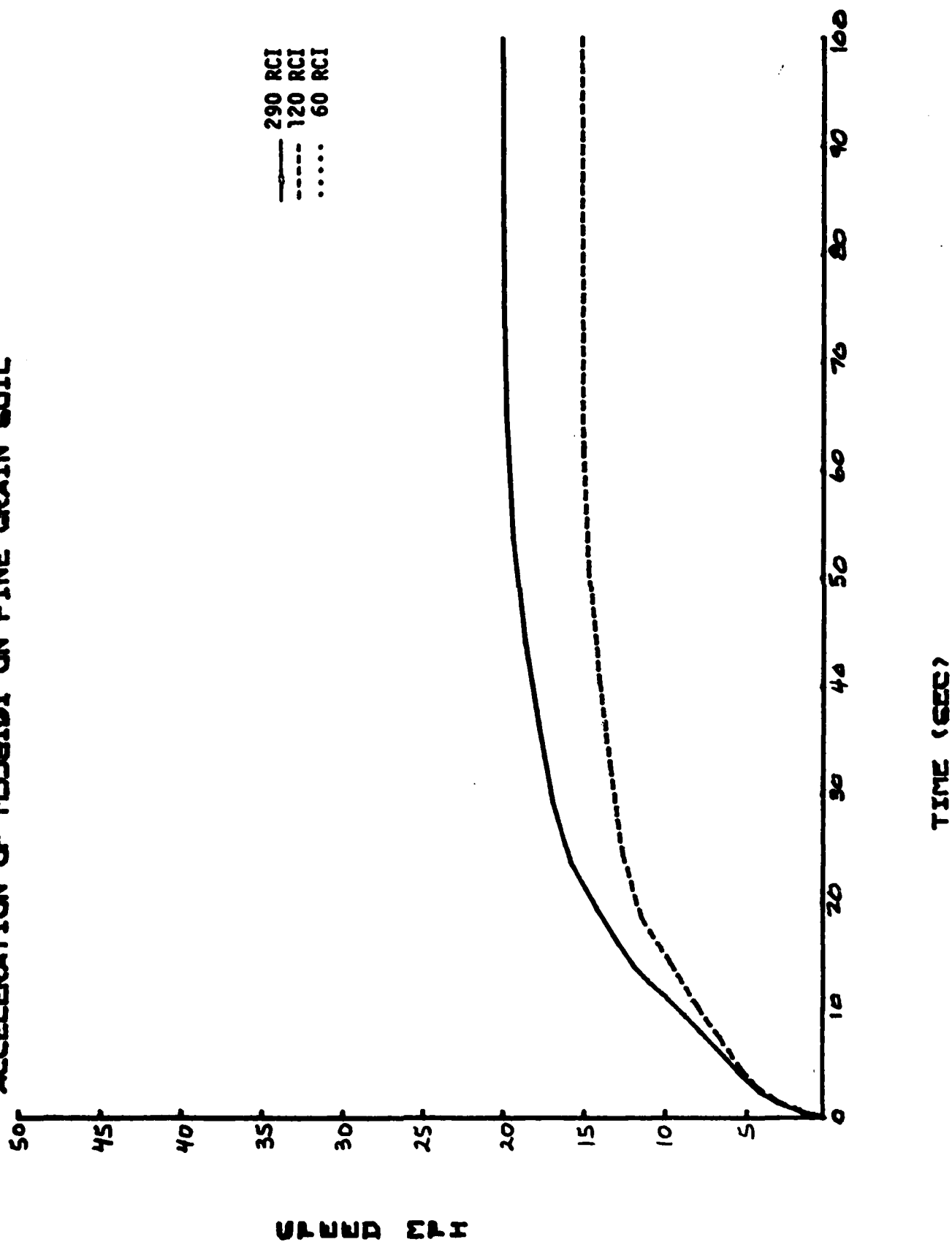


ACCELERATION OF M358 IN FINE GRAIN SOIL



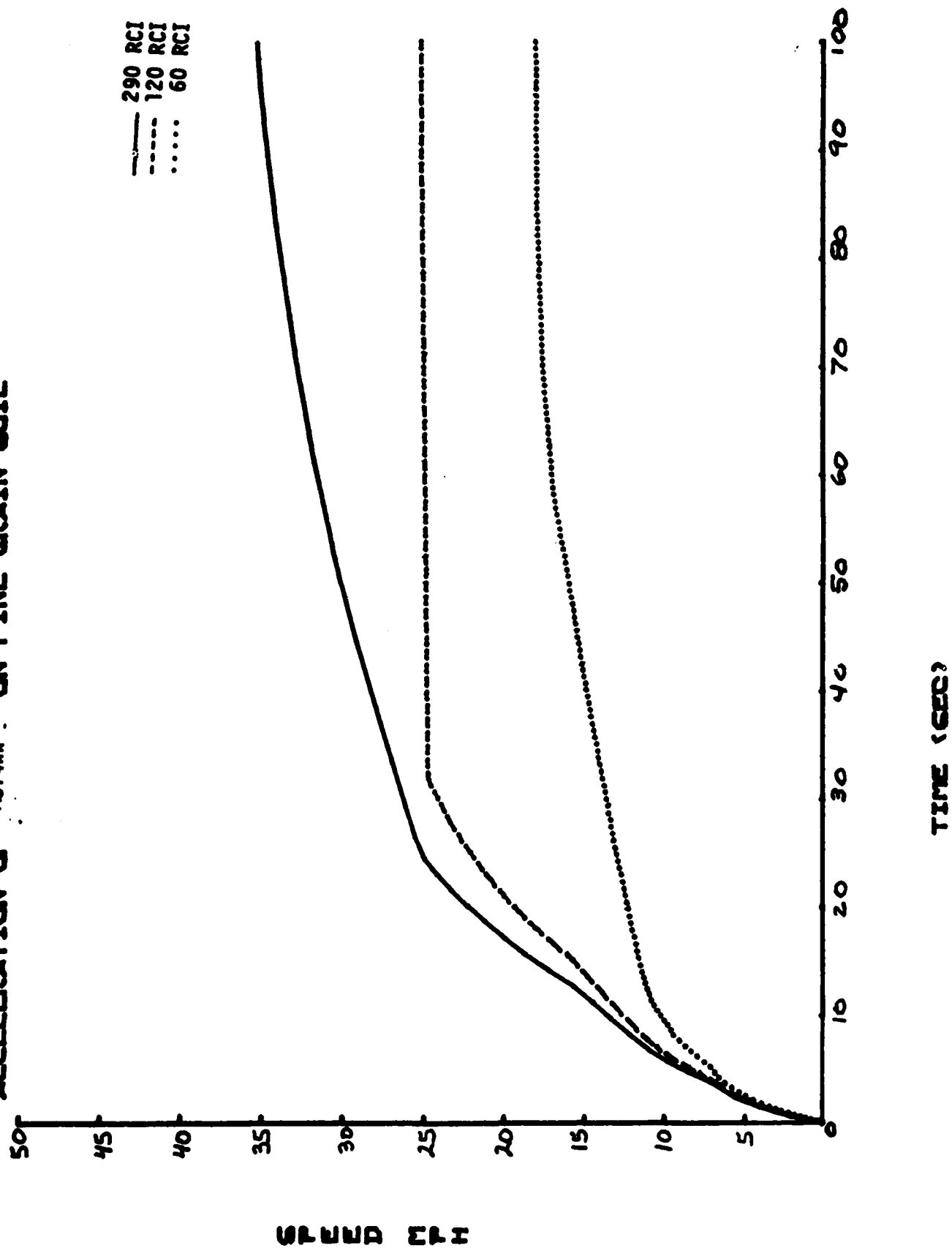
SPEED (FT)

ACCELERATION OF MISSILE ON FINE GRAIN SOIL

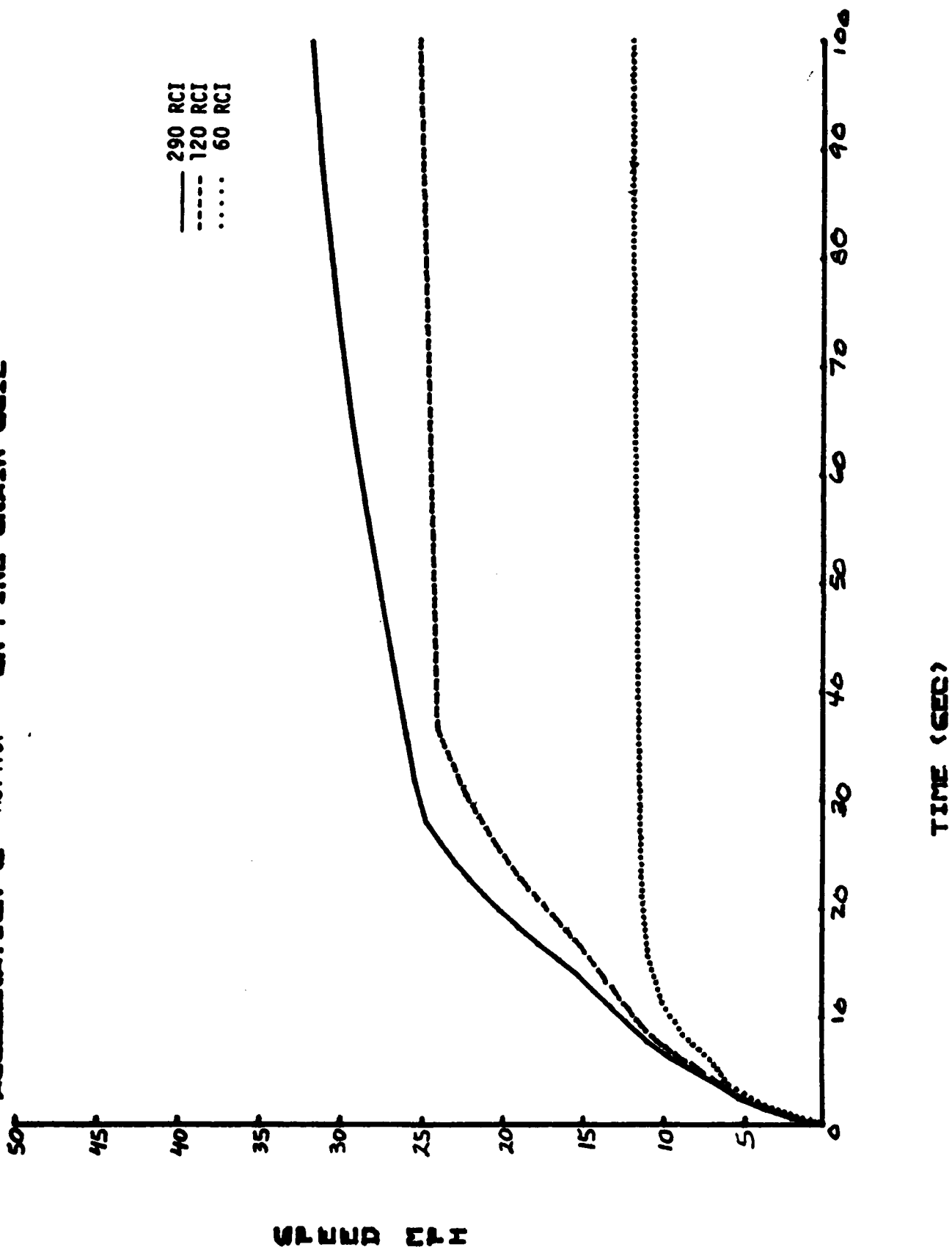


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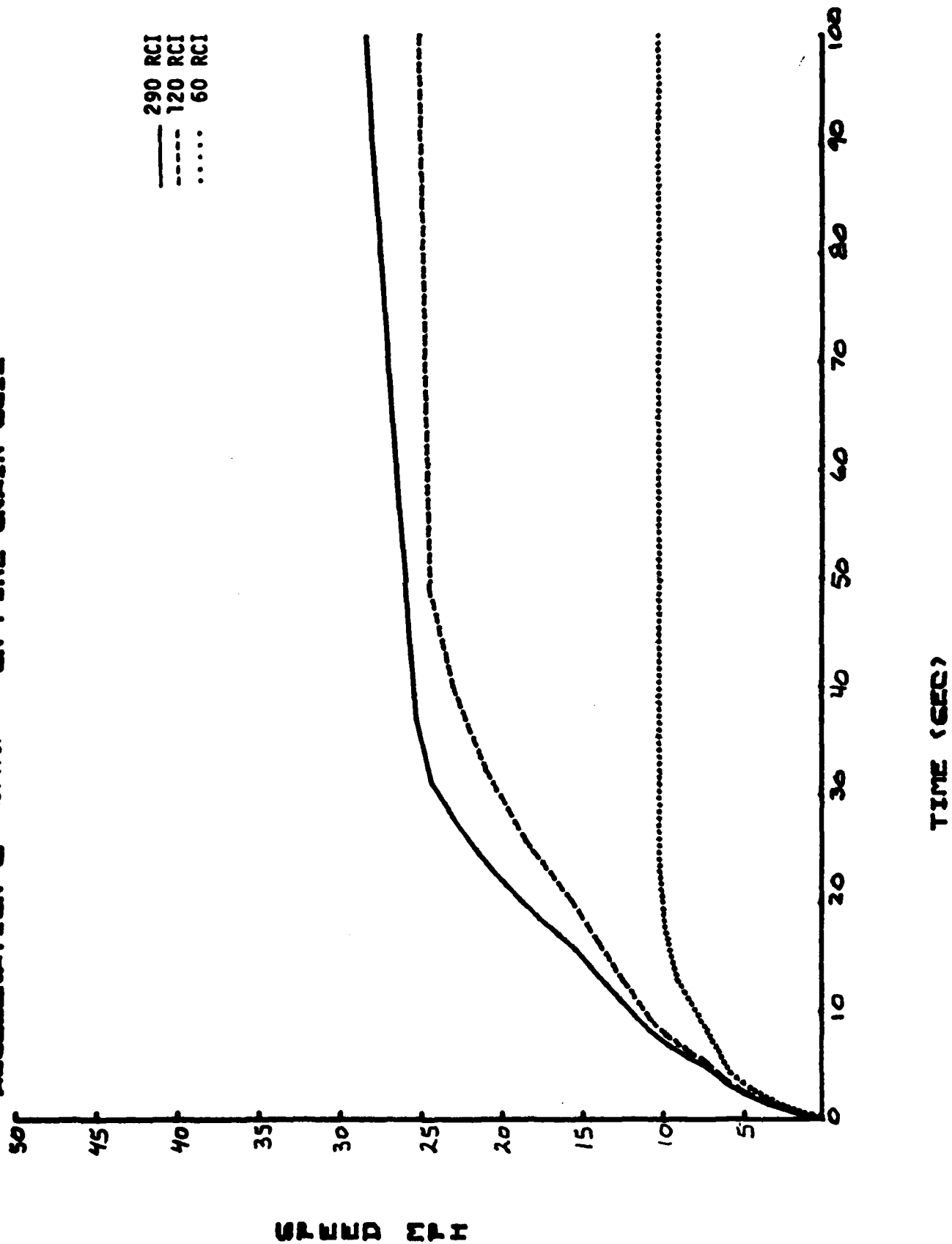
ACCELERATION OF M814W ON FINE GRAIN SOIL



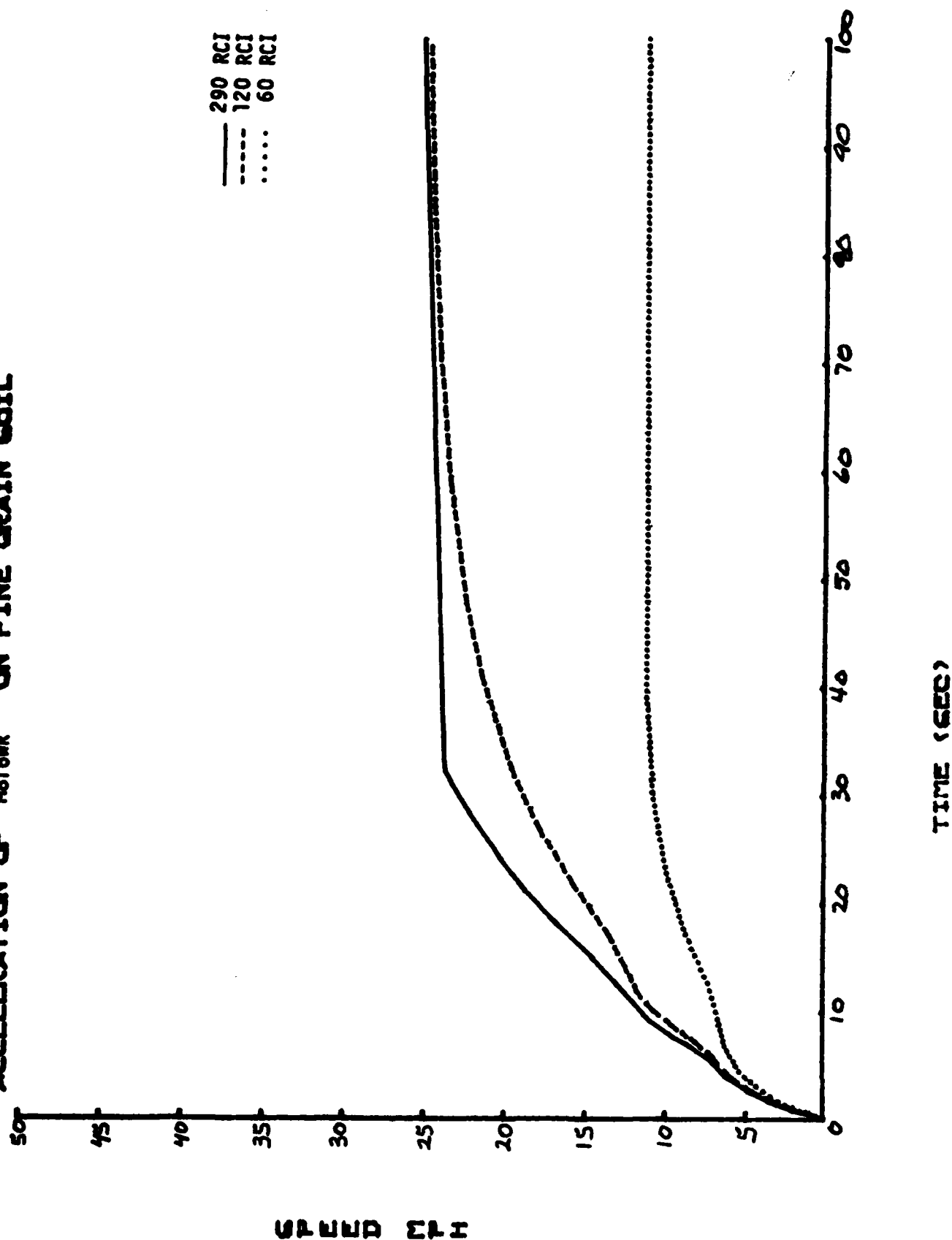
ACCELERATION OF M814101 ON FINE GRAIN SOIL



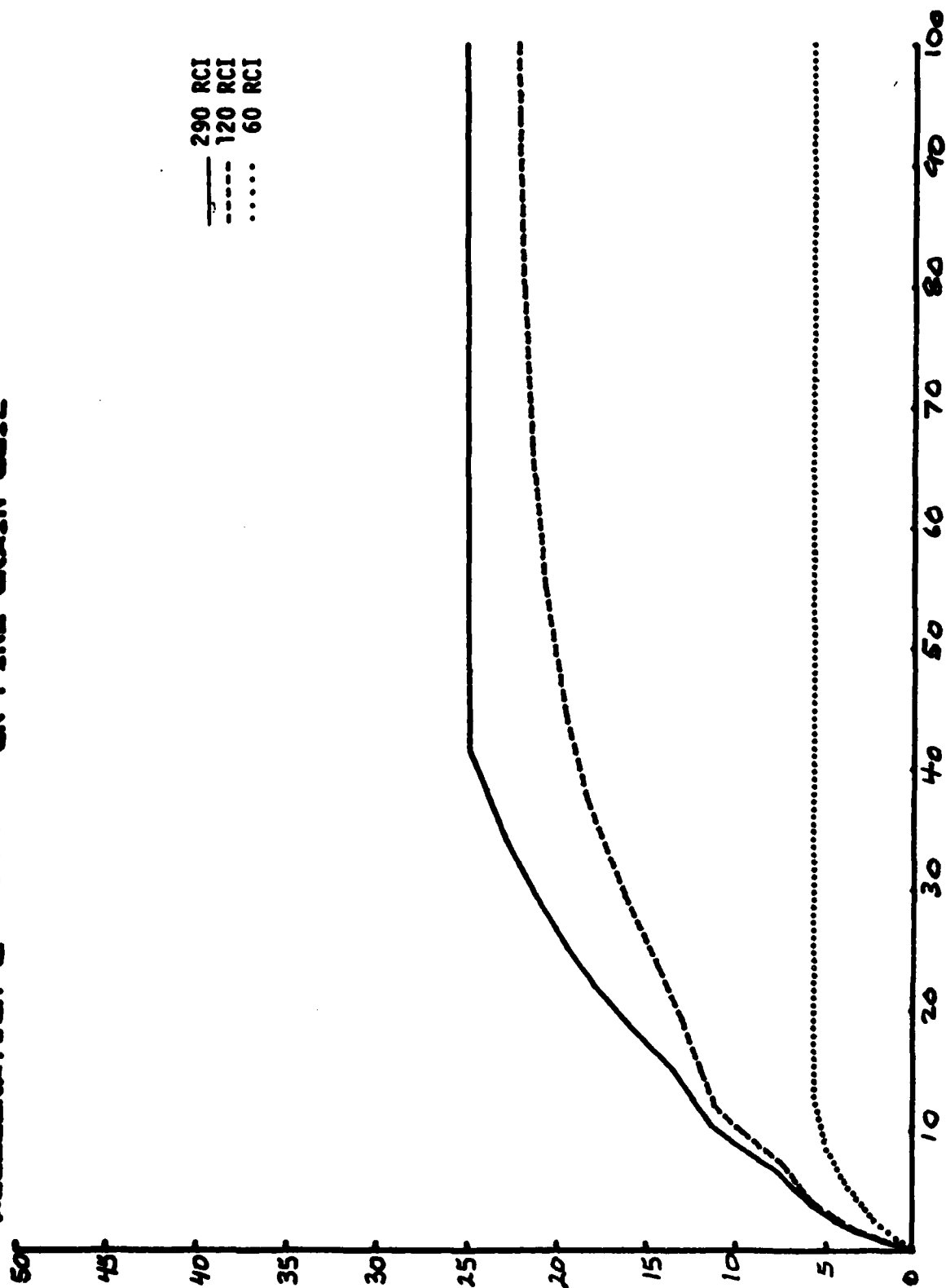
ACCELERATION OF M814107 ON FINE GRAIN GOIL



ACCELERATION OF M816WR ON FINE GRAIN SOIL



ACCELERATION OF M81616 ON FINE GRAIN SOIL



TIME (SEC)

ACCEL (G)

PREDICTED VEHICLE MOBILITY

CUMULATIVE AVERAGE SPEEDS

VEHICLE	Europe 1 - Dry			Europe 2 - Dry		
	V ₅₀ MPH	V ₉₀ MPH	PERCENT* NOGO	V ₅₀ MPH	V ₉₀ MPH	PERCENT* NOGO
Al Diss (conv)	15.2	NO-GO	15.8	18.2	NO-GO	11.1
FAV	23.3	NO-GO	12.3	26.2	NO-GO	12.1
HMMWG w/MIOI TRL	19.7	NO-GO	13.3	22.0	NO-GO	15.4
HMMWG	20.3	NO-GO	10.0	22.9	15.0	8.0
HMMWG w/MIOI TRL	20.1	NO-GO	10.7	22.6	NO-GO	10.1
M559	9.0	5.5	6.8	10.0	6.0	6.0
M559 w/MIOI TRL	8.9	5.5	7.6	9.7	5.8	7.4
M814	14.3	NO-GO	12.2	16.0	9.7	7.8
M814 w/MIOI TRL	13.9	NO-GO	12.4	15.3	9.3	9.3
M814 w/MIOI TRL	13.5	NO-GO	12.8	15.0	NO-GO	10.2
M816WR	14.0	8.4	9.3	15.0	NO-GO	10.3
M816 w/MIOI TRL	13.7	8.1	9.7	14.6	NO-GO	11.5

*DENOTES PERCENT OF AREA

AREAL OCCURRENCE OF VEHICLE NOGDs

Europe 1 - Day

VEHICLE	FACTORS CAUSING VEHICLE NOGDs			
	SURFACE STRENGTH LESS THAN VCI ₁	AVAIL TRACTION LESS THAN SOIL & SLOPE RESISTANCE	OBSTACLE INTERFERENCE	AVAIL TRACTION LESS THAN TOTAL RESISTING FORCES
Al Diesel (Keweenaw)	0.0	1.6	13.8	0.4
FAY	0.0	3.3	8.6	0.4
HMMWV w/M101 TRL	0.0	4.6	7.3	0.4
HMMWV	0.0	2.5	7.1	0.4
HMMWV w/M416 TRL	0.0	3.0	7.3	0.4
M559	0.0	2.8	2.5	1.5
M559 w/M101 TRL	0.0	3.0	3.0	1.6
M814	0.0	2.5	9.1	0.6
M814 w/M101 TRL	0.0	2.8	9.1	0.5
M814 w/M101 TRL	0.0	3.2	9.1	0.5
M816 WR	0.0	2.6	5.4	1.3
M816 w/M416 TRL	0.0	2.9	5.4	1.4

AREAL OCCURRENCE OF FACTORS LIMITING VEHICLE SPEEDS

Europe 1 - Dry

FACTORS LIMITING VEHICLE SPEEDS							
VEHICLE	RIDE	SOIL & SLOPE RESIST	VISIBILITY IN VEGETATION	MANEUVERING IN VEGETATION	ALL RESIST FORCES	ACCEL & DECEL BETWEEN OBSTACLES	OBSTACLE INTERFERENCE
AI (Cruiser) Diesel	18.2	1.9	18.4	15.0	1.0	29.7	-
FAY	10.8	0.5	31.3	14.6	0.5	30.1	-
HMMWV w/MID TRL	16.9	4.2	19.7	21.8	4.3	20.2	-
HMMWV w/MW TRL	18.0	3.5	22.0	21.9	2.7	21.9	-
HMMWV w/MW TRL	17.8	4.0	20.9	21.8	3.4	21.6	-
M559	35.2	6.4	0.8	15.5	11.9	23.1	-
M559 w/MID TRL	34.3	6.7	0.8	15.3	12.6	22.7	-
MB14	27.0	6.9	9.4	15.8	9.4	19.4	-
MB14 w/MID TRL	25.8	7.2	9.2	15.4	11.0	19.0	-
MB14 w/MID TRL	24.6	7.9	8.8	16.2	11.1	18.7	-
MB16 WR	24.0	11.4	11.3	15.4	10.0	18.7	-
MB16 w/MID TRL	23.5	10.2	11.0	15.5	11.5	18.5	-

AREAL OCCURRENCE OF VEHICLE NOGOS

Europe 2 - Dry

VEHICLE	FACTORS CAUSING VEHICLE NOGOS			
	SURFACE STRENGTH LESS THAN VCI ₁	AVAIL TRACTION LESS THAN SOIL & SLOPE RESISTANCE	OBSTACLE INTERFERENCE	AVAIL TRACTION LESS THAN TOTAL RESISTING FORCES
Al Diesel (Conv)	0.0	2.4	8.4	0.3
FAV	0.0	7.8	3.4	0.9
HMMWG w/M101 TRL	0.0	11.9	3.1	0.4
HMMWG	0.0	4.6	2.8	0.6
HMMWG w/M16 TRL	0.0	6.7	2.9	0.5
M559	0.0	4.7	0.8	0.5
M559 w/M101 TRL	0.0	5.8	1.1	0.5
M814	0.0	4.6	2.8	0.4
M814 w/M101 TRL	0.0	6.0	2.8	0.5
M814 w/M101 TRL	0.0	7.0	2.8	0.4
M816WR	0.0	4.7	2.2	3.4
M816 w/M16 TRL	0.0	6.4	2.2	2.9

AREAL OCCURRENCE OF FACTORS LIMITING VEHICLE SPEEDS

Europe 2 - Dry

VEHICLE	FACTORS LIMITING VEHICLE SPEEDS						
	RIDE	SOIL & SLOPE RESIST	VISIBILITY IN VEGETATION	MANEUVERING IN VEGETATION	ALL RESIST FORCES	ACCEL & DECEL BETWEEN OBSTACLES	OBSTACLE INTERFERENCE
(Crew) AI Diesel	18.1	1.0	24.6	14.2	3.0	28.0	-
FAV	7.1	0.2	40.3	12.8	1.5	26.0	-
HMMWV w/MID TRL	11.4	6.3	26.1	12.8	8.4	19.5	-
HMMWV w/MIG TRL	13.2	4.7	31.1	14.2	6.9	21.9	-
M559 w/MID TRL	12.7	5.5	29.4	13.5	7.6	21.2	-
M559 w/MID TRL	28.1	11.1	3.2	15.2	15.7	20.7	-
M559 w/MID TRL	27.2	11.1	3.0	14.9	16.4	19.9	-
M814 w/MID TRL	21.6	12.5	15.4	12.6	12.5	17.6	-
M814 w/MID TRL	20.4	12.7	14.6	12.3	13.5	17.1	-
M814 w/MID TRL	19.2	12.4	13.6	12.5	15.3	16.7	-
M814 w/MID TRL	19.3	17.0	14.3	10.8	11.0	17.4	-
M814 w/MID TRL	18.4	15.7	13.3	11.5	12.7	16.9	-

PREDICTED VEHICLE MOBILITY

CUMULATIVE AVERAGE SPEEDS

VEHICLE	Europe 1 - Wet			Europe 2 - Wet		
	V ₅₀ MPH	V ₉₀ MPH	PERCENT* NOGO	V ₅₀ MPH	V ₉₀ MPH	PERCENT* NOGO
Al Diesel (conv)	12.1	NO-GO	24.3	14.1	NO-GO	32.0
FAY	15.9	NO-GO	28.3	18.3	NO-GO	35.7
HMMWV w/M101 TRL	15.4	NO-GO	28.4	17.3	NO-GO	34.0
HMMWV	16.3	NO-GO	18.3	19.1	NO-GO	26.2
HMMWV w/M101 TRL	16.1	NO-GO	22.5	18.6	NO-GO	28.3
M559	4.6	NO-GO	48.6	NO-GO	NO-GO	71.9
M559 w/M101 TRL	NO-GO	NO-GO	51.4	NO-GO	NO-GO	73.8
M814	9.6	NO-GO	29.1	8.0	NO-GO	42.3
M814 w/M101 TRL	8.9	NO-GO	39.4	NO-GO	NO-GO	55.8
M814 w/M101 TRL	8.2	NO-GO	44.8	NO-GO	NO-GO	62.2
M816WR	8.7	NO-GO	42.6	NO-GO	NO-GO	64.9
M816 w/M101 TRL	6.5	NO-GO	48.8	NO-GO	NO-GO	71.0

*DENOTES PERCENT OF AREA

AREAL OCCURRENCE OF VEHICLE NOGDS

Europe 1 - W₂ +

VEHICLE	FACTORS CAUSING VEHICLE NOGDS			
	SURFACE STRENGTH LESS THAN VCI ₁	AVAIL TRACTION LESS THAN SOIL & SLOPE RESISTANCE	OBSTACLE INTERFERENCE	AVAIL TRACTION LESS THAN TOTAL RESISTING FORCES
AI Diesel (Kend)	0.1	9.8	13.6	0.8
FAV	0.1	16.7	8.6	2.9
HMMWV w/M101 TRL	0.1	19.4	7.1	1.8
HMMWV	0.1	10.1	6.9	1.2
HMMWV w/M416 TRL	0.1	12.7	7.1	2.6
M559	0.1	45.8	2.0	0.7
M559 w/M101 TRL	0.1	47.6	2.0	1.7
M814	0.1	19.9	8.3	0.8
M814 w/M101 TRL	0.1	30.5	8.0	0.8
M814 w/M101 TRL	0.1	35.8	7.8	1.1
M816 WR	0.1	38.3	3.4	0.8
M816 w/M116 TRL	0.1	45.2	3.3	0.3

AREAL OCCURRENCE OF FACTORS LIMITING VEHICLE SPEEDS

Europe 1 - Wet

VEHICLE	FACTORS LIMITING VEHICLE SPEEDS						
	RIDE	SOIL & SLOPE RESIST	VISIBILITY IN VEGETATION	MANEUVERING IN VEGETATION	ALL RESIST FORCES	ACCEL & DECEL BETWEEN OBSTACLES	OBSTACLE INTERFERENCE
(Gvw) A1 Diesel	15.2	1.3	17.7	12.7	2.4	26.4	-
FAY	4.2	0.1	32.1	11.2	0.3	23.8	-
HMMWG w/mid TRL	10.0	1.8	21.3	17.5	6.1	15.0	-
HMMWG	12.8	1.2	25.2	20.8	3.6	18.0	-
HMMWG w/mid TRL	11.2	1.5	24.0	19.6	4.3	17.1	-
M559	10.1	7.7	0.9	6.7	16.0	10.1	-
M559 w/mid TRL	9.5	7.2	0.8	6.2	15.5	9.4	-
M814	10.5	6.6	9.4	13.1	18.2	13.0	-
M814 w/mid TRL	8.7	6.5	8.1	10.0	15.3	11.9	-
M814 w/mid TRL	7.2	6.9	7.1	9.4	14.2	10.3	-
M816 WR	7.9	7.8	8.6	7.2	14.5	11.3	-
M816 w/mid TRL	6.3	10.2	6.9	6.3	13.4	8.1	-

AREAL OCCURRENCE OF VEHICLE NOGOS

Europe 2 - Wet

VEHICLE	FACTORS CAUSING VEHICLE NOGOS			
	SURFACE STRENGTH LESS THAN VCI ₁	AVAIL TRACTION LESS THAN SOIL & SLOPE RESISTANCE	OBSTACLE INTERFERENCE	AVAIL TRACTION LESS THAN TOTAL RESISTING FORCES
AI Diesel (conv)	0.1	22.8	8.3	0.8
FAY	0.1	29.6	3.4	2.6
HMMWV w/M101 TRL	0.1	30.0	3.0	0.9
HMMWV	0.1	23.0	2.6	0.5
HMMWV w/M116 TRL	0.1	24.9	2.7	0.6
M559	0.1	71.1	0.5	0.2
M559 w/M101 TRL	0.1	72.4	0.7	0.6
M814	0.1	38.1	2.2	1.9
M814 w/M101 TRL	0.1	52.4	2.0	1.3
M814 w/M101 TRL	0.1	58.9	2.0	1.2
M816 WR	0.1	63.3	1.1	0.4
M816 w/M116 TRL	0.1	69.5	1.1	0.3

AREAL OCCURRENCE OF FACTORS LIMITING VEHICLE SPEEDS

Europe 2 - Wet

VEHICLE	FACTORS LIMITING VEHICLE SPEEDS						
	RIDE	SOIL & SLOPE RESIST	VISIBILITY IN VEGETATION	MANEUVERING IN VEGETATION	ALL RESIST FORCES	ACCEL & DECEL BETWEEN OBSTACLES	OBSTACLE INTERFERENCE
(Given) Al Diesel	10.6	0.7	18.4	9.9	8.0	20.4	-
FAV	2.1	0.0	35.9	8.4	0.3	17.8	-
HMMWV w/mid TRL	4.7	1.8	24.7	9.4	11.4	14.0	-
HMMWV w/mid TRL	6.5	0.2	31.6	11.5	7.9	16.2	-
HMMWV w/mid TRL	6.1	0.9	29.4	11.3	8.7	15.4	-
M559	3.6	8.8	0.8	1.7	8.1	5.3	-
M559 w/mid TRL	3.2	9.0	0.8	1.6	7.0	4.8	-
M814	5.9	9.6	7.4	5.7	21.1	8.1	-
M814 w/mid TRL	5.1	9.2	5.6	3.4	14.3	6.7	-
M814 w/mid TRL	4.2	8.2	4.8	2.5	12.5	5.6	-
M814 wR	4.0	9.3	4.3	2.5	9.3	5.7	-
M814 w/mid TRL	3.2	9.1	3.5	1.3	7.4	4.6	-

PREDICTED VEHICLE MOBILITY

CUMULATIVE AVERAGE SPEEDS

VEHICLE	Europe 1 - Snow			Europe 2 - Snow		
	V50 MPH	V90 MPH	PERCENT* NOGO	V50 MPH	V90 MPH	PERCENT* NOGO
Al Diesel (Caterpillar)	16.2	NO-GO	29.6	15.6	NO-GO	37.2
FAY	NO-GO	NO-GO	52.0	NO-GO	NO-GO	59.9
HMMWV w/M101 TRL	NO-GO	NO-GO	50.3	NO-GO	NO-GO	59.6
HMMWV	18.6	NO-GO	25.2	18.5	NO-GO	35.5
HMMWV w/M116 TRL	16.9	NO-GO	32.4	16.3	NO-GO	43.7
M559	4.4	NO-GO	23.0	4.4	NO-GO	34.3
M559 w/M101 TRL	4.1	NO-GO	26.3	4.1	NO-GO	38.2
M814	7.2	NO-GO	24.2	7.3	NO-GO	35.6
M814 w/M101 TRL	6.6	NO-GO	28.1	6.6	NO-GO	41.6
M814 w/M101 TRL	6.1	NO-GO	32.8	6.1	NO-GO	44.4
M816WR	6.1	NO-GO	23.3	6.1	NO-GO	34.9
M816 w/M116 TRL	5.8	NO-GO	25.8	5.9	NO-GO	38.5

*DENOTES PERCENT OF AREA

AREAL OCCURRENCE OF VEHICLE NOGOS

Europe 1 - Snow

VEHICLE	FACTORS CAUSING VEHICLE NOGOS			
	SURFACE STRENGTH LESS THAN VCI ₁	AVAIL TRACTION LESS THAN SOIL & SLOPE RESISTANCE	OBSTACLE INTERFERENCE	AVAIL TRACTION LESS THAN TOTAL RESISTING FORCES
Al Diesel (conv)	0.0	16.9	11.7	1.0
FAV	0.0	39.8	8.6	3.6
HMMWV w/M101 TRL	0.0	40.6	7.1	2.6
HMMWV	0.0	13.7	7.0	4.5
HMMWV w/M101 TRL	0.0	22.6	7.0	2.8
M559	0.0	19.0	2.5	1.5
M559 w/M101 TRL	0.0	21.1	2.9	2.3
M814	0.0	18.3	5.1	0.8
M814 w/M101 TRL	0.0	22.5	5.1	0.5
M814 w/M101 TRL	0.0	26.3	5.1	1.4
M816 w/M101 TRL	0.0	18.7	3.8	0.8
M816 w/M101 TRL	0.0	21.0	3.9	0.9

AREAL OCCURRENCE OF FACTORS LIMITING VEHICLE SPEEDS

Europe 1 - Snow

VEHICLE	FACTORS LIMITING VEHICLE SPEEDS						
	RIDE	SOIL & SLOPE RESIST	VISIBILITY IN VEGETATION	MANEUVERING IN VEGETATION	ALL RESIST FORCES	ACCEL & DECEL BETWEEN OBSTACLES	OBSTACLE INTERFERENCE
Cuey? AI Diesel	5.4	7.1	10.3	10.1	15.3	22.3	-
FAY	1.2	2.3	18.1	6.2	6.2	14.1	-
HMMWG w/MID TRL	0.2	5.3	5.2	9.6	21.4	8.1	-
HMMWG	1.3	6.3	12.6	15.8	23.5	15.4	-
HMMWG w/MID TRL	0.6	6.4	8.2	13.7	25.3	13.3	-
M559	1.6	12.8	0.2	13.7	38.1	10.7	-
M559 w/MID TRL	1.1	12.0	0.1	13.5	37.6	9.4	-
MB14	1.2	18.7	1.4	14.0	31.8	8.6	-
MB14 w/MID TRL	0.6	15.8	0.6	11.3	36.3	7.3	-
MB14 w/MID TRL	0.1	22.2	0.4	12.0	26.0	6.6	-
MB16 WR	1.0	30.3	0.8	12.8	24.0	7.9	-
MB16 w/MID TRL	0.6	27.6	0.5	12.4	25.4	7.6	-

AREAL OCCURRENCE OF VEHICLE NOGDS

Europe 2-Snow

VEHICLE	FACTORS CAUSING VEHICLE NOGDS			
	SURFACE STRENGTH LESS THAN VCT ₁	AVAIL TRACTION LESS THAN SOIL & SLOPE RESISTANCE	OBSTACLE INTERFERENCE	AVAIL TRACTION LESS THAN TOTAL RESISTING FORCES
Al Diesel (Euro)	0.0	30.6	5.8	0.8
FAV	0.0	51.0	3.4	5.5
HMMWG w/M101 TRL	0.0	51.0	3.0	6.6
HMMWG	0.0	30.5	2.7	2.3
HMMWG w/M416 TRL	0.0	39.0	2.8	1.9
M559	0.0	32.6	0.8	0.9
M559 w/M101 TRL	0.0	36.3	0.9	1.0
M814	0.0	32.2	2.5	0.9
M814 w/M101 TRL	0.0	38.3	2.5	0.8
M814 w/M101 TRL	0.0	40.4	2.5	1.5
M816WR	0.0	32.5	1.7	0.7
M816 w/M416 TRL	0.0	36.2	1.7	0.6

AREAL OCCURRENCE OF FACTORS LIMITING VEHICLE SPEEDS

Europe 2 - Snow

FACTORS LIMITING VEHICLE SPEEDS							
VEHICLE	RIDE	SOIL & SLOPE RESIST	VISIBILITY IN VEGETATION	MANEUVERING IN VEGETATION	ALL RESIST FORCES	ACCEL & DECEL BETWEEN OBSTACLES	OBSTACLE INTERFERENCE
(Cuev) AI Dfzel	1.2	9.0	8.4	7.2	17.9	19.0	-
FAY	0.1	2.9	17.6	3.7	5.7	10.2	-
HMMWG w/mid TRL	0.0	8.0	3.0	3.9	18.6	5.8	-
HMMWG	0.4	8.6	11.6	8.2	23.2	12.6	-
HMMWG w/mid TRL	0.3	8.5	7.3	7.2	22.5	10.6	-
M559	1.8	14.1	0.6	8.1	34.4	6.7	-
M559 w/mid TRL	0.9	14.2	0.4	7.7	32.9	5.8	-
MB14	1.0	19.4	1.8	8.3	28.6	5.3	-
MB14 w/mid TRL	0.5	17.0	0.4	5.2	31.6	3.7	-
MB14 w/mid TRL	0.3	20.6	0.2	6.3	25.1	3.1	-
MB14 WR	0.9	32.1	1.3	7.1	19.2	4.5	-
MB14 w/mid TRL	0.4	27.2	0.8	6.9	22.0	4.2	-

PREDICTED VEHICLE MOBILITY

CUMULATIVE AVERAGE SPEEDS

VEHICLE	Mid-east 1 - Dry			Mid-East 1 - Wet		
	V ₅₀ MPH	V ₉₀ MPH	PERCENT* NOGO	V ₅₀ MPH	V ₉₀ MPH	PERCENT* NOGO
Al Dicks (conv)	8.7	NO-GO	32.6	6.8	NO-GO	42.5
FAV	23.7	NO-GO	29.8	NO-GO	NO-GO	50.5
HMMWV w/M101 TRL	15.7	NO-GO	34.0	NO-GO	NO-GO	52.8
HMMWV	16.8	NO-GO	26.7	14.8	NO-GO	38.8
HMMWV w/M116 TRL	16.4	NO-GO	29.0	12.5	NO-GO	43.9
M559	6.0	NO-GO	20.9	4.0	NO-GO	43.1
M559 w/M101 TRL	5.8	NO-GO	22.8	3.7	NO-GO	47.3
M814	10.0	NO-GO	28.1	NO-GO	NO-GO	67.9
M814 w/M101 TRL	9.6	NO-GO	29.8	NO-GO	NO-GO	70.6
M814 w/M101 TRL	9.2	NO-GO	30.6	NO-GO	NO-GO	73.1
M816WR	9.1	NO-GO	26.6	6.5	NO-GO	40.3
M816 w/M116 TRL	8.9	NO-GO	28.6	5.2	NO-GO	47.1

*DENOTES PERCENT OF AREA

AREAL OCCURRENCE OF VEHICLE NOGOS

Mid-East 1 - Dry

VEHICLE	FACTORS CAUSING VEHICLE NOGOS			
	SURFACE STRENGTH LESS THAN VCI ₁	AVAIL TRACTION LESS THAN SOIL & SLOPE RESISTANCE	OBSTACLE INTERFERENCE	AVAIL TRACTION LESS THAN TOTAL RESISTING FORCES
Al Diesel (Grey)	0.0	0.6	31.6	0.4
FAV	0.0	4.1	25.4	0.3
HMMWG w/M101 TRL	0.0	7.9	26.0	0.1
HMMWG	0.0	1.5	25.1	0.1
HMMWG w/M416 TRL	0.0	3.5	25.3	0.2
M559	0.0	1.6	18.8	0.5
M559 w/M101 TRL	0.0	2.9	18.8	1.1
M814	0.0	1.5	26.5	0.1
M814 w/M101 TRL	0.0	2.5	26.5	0.8
M814 w/M101 TRL	0.0	3.4	26.8	0.4
M816 WR	0.0	1.5	22.4	2.7
M816 w/M416 TRL	0.0	2.7	23.3	2.6

AREAL OCCURRENCE OF FACTORS LIMITING VEHICLE SPEEDS

Mid-East 1 - Dry

FACTORS LIMITING VEHICLE SPEEDS							
VEHICLE	RIDE	SOIL & SLOPE RESIST	VISIBILITY IN VEGETATION	MANEUVERING IN VEGETATION	ALL RESIST FORCES	ACCEL & DECEL BETWEEN OBSTACLES	OBSTACLE INTERFERENCE
(CUCV) A1 Diesel	38.4	1.3	0.1	17.7	0.4	9.6	-
FAV	37.1	2.2	4.3	13.3	0.9	13.3	-
HMMWV w/M101 TRL	32.2	5.6	8.0	9.7	2.6	8.0	-
HMMWV HMMWV w/M101 TRL	38.2 36.1	5.2 5.8	8.8 8.3	9.6 9.4	1.9 2.0	9.6 9.3	- -
M559	39.8	8.3	0.0	3.7	6.5	20.9	-
M559 w/M101 TRL	38.6	8.1	0.0	3.7	6.4	20.5	-
MB14	34.2	8.5	6.6	6.1	5.2	11.3	-
MB14 w/M101 TRL	32.7	8.4	6.5	6.5	4.8	11.3	-
MB14 w/M101 TRL	30.9	9.8	5.4	7.0	5.3	10.9	-
MB16 WR	31.9	10.0	5.7	6.0	6.0	13.9	-
MB16 w/M101 TRL	30.2	10.2	4.8	6.2	7.3	12.8	-

AREAL OCCURRENCE OF VEHICLE NODOS

Mid-East 1 - West

VEHICLE	FACTORS CAUSING VEHICLE NODOS			
	SURFACE STRENGTH LESS THAN VCI ₁	AVAIL TRACTION LESS THAN SOIL & SLOPE RESISTANCE	OBSTACLE INTERFERENCE	AVAIL TRACTION LESS THAN TOTAL RESISTING FORCES
AI Diesel (Crew)	0.0	10.1	31.6	0.8
FAV	0.0	25.7	24.5	0.3
HMMWV w/M101 TRL	0.0	26.3	26.0	0.5
HMMWV	0.0	13.5	25.1	0.2
HMMWV w/M116 TRL	0.0	18.0	25.3	0.6
M559	0.0	24.3	17.4	1.4
M559 w/M101 TRL	0.0	28.1	17.3	1.9
M814	0.0	38.0	26.5	3.4
M814 w/M101 TRL	0.0	40.9	26.5	3.2
M814 w/M101 TRL	0.0	43.1	26.8	3.2
M816 WR	0.0	15.3	21.6	3.4
M816 w/M116 TRL	0.0	24.4	21.2	1.5

AREAL OCCURRENCE OF FACTORS LIMITING VEHICLE SPEEDS

M. J. East 1 - W. 1

FACTORS LIMITING VEHICLE SPEEDS							
VEHICLE	RIDE	SOIL & SLOPE RESIST	VISIBILITY IN VEGETATION	MANEUVERING IN VEGETATION	ALL RESIST FORCES	ACCEL & DECEL BETWEEN OBSTACLES	OBSTACLE INTERFERENCE
(over) AI Diesel	31.3	1.6	0.6	15.3	0.2	8.6	-
FAY	21.0	0.7	8.4	8.0	0.1	11.4	-
HMMWV w/MB1 TRL	22.6	3.9	5.1	5.9	1.5	8.2	-
HMMWV w/MB1 TRL	30.0	3.8	7.1	2.2	2.0	10.2	-
HMMWV w/MB1 TRL	27.4	4.0	5.9	7.9	1.5	9.2	-
M559	22.6	9.3	0.2	3.5	6.7	14.7	-
M559 w/MB1 TRL	19.4	8.7	0.2	3.8	7.3	13.2	-
MB14	14.0	5.6	1.6	1.6	6.1	3.3	-
MB14 w/MB1 TRL	11.6	6.3	1.3	1.5	6.3	2.5	-
MB14 w/MB1 TRL	1.2	7.0	0.9	1.3	6.5	2.1	-
MB14 WR	20.7	12.3	2.8	4.4	7.7	11.9	-
MB14 w/MB1 TRL	17.4	1.7	2.4	4.3	7.5	9.7	-

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